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Programs designed to enhance the educational experiences of the gifted student and to develop his talents maximally are occurring with increasing frequency throughout the educational systems of the United States. This collection of articles provides the descriptions of many such programs for both elementary and secondary schools. Carnegie Institute of Technology has developed programs in English, social studies, math, and science for gifted students in many of the high schools in the Pittsburgh area. Also described is a curriculum continuity program developed in the Pittsburgh elementary schools which provides for continuous learning experiences through which able students can progress, each at his own pace. Puerto Rico began a new high school program in 1960 which provides a general education of high quality by: combining resources; reorganizing the curriculum, the teaching, and the learning experiences; and introducing such new media as T.V. and teaching machines. Jackson State College in Mississippi has developed a program for selected Negro high school students which operates on Saturdays; each group of 36 students attends for one year.

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the superior student

THE NEWSLETTER OF THE INTER-UNIVERSITY COMMITTEE ON THE SUPERIOR STUDENT

November-December, 1963
Volume 6, Number 1
Boulder, Colorado

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HONORS AND THE SCHOOLS

It is evident from the contents of this issue and from other responses to our inquiries that Departments of Education and school systems in many states are attempting to satisfy demands that public education meet the needs of all students. Programs have been individualized. Flexibility in offerings and approaches has been introduced. Superior students are being provided both greater breadth and greater depth in their work.

J. Ned Bryan has delineated these advances in the lead article of this issue. As he emphasizes, new approaches have been stimulated in recent years by the Advanced Placement and National Merit Scholarship programs, innovations in science teaching fostered and financed by the National Science Foundation, the Office of Education and National Education Association's projects for the talented, activities of regional accrediting associations, and efforts of local groups. St. John's (Minnesota) Great Books plan, new means of inter-institutional cooperation in Pittsburgh, projects for the talented but culturally disadvantaged, the University of Wisconsin's statewide experiment in identifying and counseling superior students, as well as programs of other colleges, universities, and schools are detailed in additional articles and reports.

Several significant conclusions can be drawn from these presentations. First of all, collaboration between both public and private institutions of higher learning and the schools has to be in-

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(Continued from page one)

creased. Expansion of participation in the Advanced Placement Program is fundamental, of course. More colleges need to grant credit and more schools should provide courses. Where practicable, universities should open lower division courses to able high school students.

Of even greater significance would be active joint efforts on the part of higher institutions and schools not only in the development of enriched courses, but in the creation of full honors programs in the schools. This can be accomplished only if it is understood that honors involves innovation rather than mere acceleration, and if anti-democratic prejudices against intellectuals and honors are dissipated. Unfortunately, such tendencies still are part of the educational climate of opinion in some schools and colleges. But they are completely out of place in our constantly changing age, an age that demands educational innovation and transformation. The American tradition of free compulsory education for all has to mean the complete development of the talents of each individual.

Honors programs, furthermore, can be instituted within the framework of current elementary and secondary school programs. This will require effective cooperation of college and university faculties with school teachers in the evolution of identification techniques, preparation of curricula, and experimentation with methods. It will also require departments and schools of education to plan teacher preparation programs which will "attract and prepare those who are best qualified for teaching to become the best kind of teachers."[1] These thoughts were voiced by Dean Lindley Stiles, of the University of Wisconsin, at the ICSS-sponsored conference on Honors and the Preparation of Teachers of April 1962, a conference devoted to the exploration of new departures in teacher education. Is there a more productive means of learning honors methods than through participation in a comprehensive general and departmental honors program? Such endeavors provide intellectual growth, but they also can serve as laboratories in which proficient pedagogical processes are learned. Our best teachers did not gain their proficiency from professional courses alone. They were stimulated and deeply influenced by approaches used in their general and disciplinary studies.

What we are proposing is the effectuation of a vital educational continuum in the identification, recognition, and preparation of the talented which will revitalize instruction from the elementary years through college. Substantial beginnings already have been made, but much needs to be accomplished. Honors in many schools and colleges means only accelerated courses or extra-curriculur, noncredit programs. And this is not honors, as an examination of our 16 Major Features of a Full Honors Program would emphasize. Programs for the talented must be an essential part of the curriculum. They must include the untilization of validated honors methods—interdisciplinary approaches, seminars, colloquia, as well as independent reading and research. Only in this way can the needs of the able be successfully met.—*Philip I. Mitterling.*

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[1] See "Talent and Tomorrow's Teachers: The Honors Approach" (Office of Education: *New Dimensions in Higher Education*, No. 11), 67.

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TALENT *and today's schools*

J. NED BRYAN*

Tomorrow's candidates for college honors are in today's schools. The newsletter of the Inter-university Committee on the Superior Student is thus an appropriate forum for presenting a brief survey of several efforts to develop talent at the secondary level.

Even a cursory examination of the national scene reveals that some schools fail to recognize gifted pupils and frequently do not provide the intellectual stimulus and sustenance appropriate to the development of talent. Most high schools, however, do make at least minimal provisions for identifying and nurturing the talented. It is also clear that efforts in behalf of talented youth are productive and that an increasing number of secondary schools are providing challenges and opportunities of such a caliber that many subsequent college experiences pale by comparison.

It is well, prior to examining specific provisions for talented secondary school students, to keep in mind that efforts in this area take place within an educational and social context. Both the role of the school and the nature and needs of the talented must be taken into account if provisions for such youth are to be seen in proper perspective.

The some 26,000 secondary schools in our nation vary in size, composition of pupil population, and purpose. Most schools are responsible for educating youth at all levels of ability. The composition of the population for which they are responsible can be inferred from the observation that for every 1,000 pupils who entered the fifth grade in 1954, 919 entered the ninth grade in 1959, 636 graduated from high school in 1962, and 336 entered college that fall.[1] Pupils in secondary schools have abilities that are somewhat higher than those of the general population in that some, but by no means all, of the less able pupils drop out of school. This fact, however, does not relieve secondary schools of the responsibility of providing appropriate educational experiences for those of lesser ability who remain in school or, indeed, of constantly endeavoring to improve the school's holding power through even more realistic offerings.

Schools cannot be held unduly responsible for the fact that not all of the able youth in our society enter college or for the fact that not all who do enter can profit from its offerings; many factors influence college attendance. Nevertheless, each school is solely responsible for the nature and quality of the educational experiences it provides for the talented youth in its student body.

Talent, broadly speaking, can be subsumed under four general, nondiscrete categories. Useful as guides to thinking about problems and programs, the categories are (1) academic talent, (2) creative talent, (3) kinesthetic talent (e.g. craftsmanship), and (4) psychosocial talent (e.g. leadership). The talented individual may be described as one who possesses high ability, potential or demonstrated, in one or more of those categories.

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*Article prepared by J. Ned Bryan, Specialist, Education of Gifted and Talented Children and Youth, U.S. Office of Education, for *The Superior Student*, newsletter of the Inter-University Committee on the Superior Student.

[1] *Digest of Educational Statistics*, 1963 Edition. U.S. Department of Health, Education, and Welfare, Office of Education. OE-10024-63. p 94.

Not all categories of talent are equally amenable to treatments now available in our educational institutions. The school or college, however, that makes specific provisions for developing talent in but one or two of these categories must consciously decide to limit its efforts to less than the entire gamut.

Programs, Plans, and Provisions—An Overview

The following brief overview is concerned with talent development at the secondary school level. No attempt is made to be comprehensive, to provide historical sequence, or to be representative. The descriptions are illustrative of the many efforts—national, regional, and local—that are being made to develop talent in today's schools.

A National Effort—Insights and Information. The National Education Association initiated its Project on the Academically Talented Student in the fall of 1957. Designed to focus the attention of the nation's top educators and laymen on the problems involved in finding and educating academically talented secondary school students, this project has had and will continue to have a significant impact upon the American high school. Conferences—the first under the chairmanship of Dr. James B. Conant—workshops, consultants, and a most successful program of publications have served to stimulate and to inform concerned personnel.

Among the publications produced by the project are *Art for the Academically Talented, Business and Economic Education for the Academically Talented, English for the Academically Talented, Modern Foreign Languages and the Academically Talented, Music for the Academically Talented, Science for the Academically Talented,* and such bulletins as *Administration-Procedures and School Practices for the Academically Talented.* The project will continue with a limited staff during the current year. Its activities, however, will be confined to strengthening programs at the secondary school level; no conferences are planned. Publications will continue to be available and consultative service will be provided in the year ahead.

A National Effort—Incentive. The largest independently supported scholarship program in the history of education, The National Merit Scholarship Program, was initiated in 1955. About 13,000 semifinalists were selected in 1963 from every state and territory. These boys and girls, who will complete their high school work in 1964, represent the most able youth from more than 16,000 schools.

One of the avowed objectives of the Merit Program is "to discover exceptionally talented young people, and to encourage them to obtain a college education."[2] Through scholarships the National Merit Scholarship Corporation has been a powerful stimulant to academic excellence within the existing framework of the secondary school. Through research the NMSC promises to provide even more significant insights into school-college relations as they affect the talented student.

National and Local Efforts—One Type of Acceleration. Some talented students take college-level courses in their high schools; some take courses in local colleges during a part of the school day; still others attend college in the evening or during the summer. Increasingly, high-ability students across the nation are afforded opportunities to experience and frequently to receive college credit for college or college-level work while they are still in high school.

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[2] *Guide to the National Merit Scholarship Program,* National Merit Scholarship Corporation, 1580 Sherman Ave., Evanston, Illinois.

The Advanced Placement program, established in the fall of 1953 with a grant from the Fund for the Advancement of Education and presently administered by the College Entrance Examination Board, provides for college experiences in high school. The intent of the program, a cooperative venture of both secondary schools and colleges, is twofold: (1) to provide the academically talented student with a deeper and broader educational experience in high school by giving him the opportunity to pursue college-level courses in high school under high school teachers and (2) by so doing, to enable him to earn college credit in high school. The actual granting of college credit for Advanced Placement courses has been and must be the prerogative of the colleges. The effectiveness of the Advanced Placement program, however, is not so much a function of whether or not college credit is granted as the degree to which colleges capitalize on the students' special training. The number of schools participating in the Advanced Placement program has steadily increased from 198 in 1957 to 1,681 in 1962.

The ICSS newsletter has carried a number of articles attesting to the effectiveness of programs designed to admit selected high school students to college courses. The programs vary widely, but as a rule full college credit is given the student who successfully completes the course.

In the light of the current trend toward the establishment of community junior colleges, which bring higher education within geographic reach of an increasing number of students, opportunities for flexible progression at the secondary-college levels will no doubt increase. Academically talented high school students will be able to enroll part time in courses at the college or take college courses in the high school taught by college professors.

National Efforts–Curriculum Development. Recent curricular developments, particularly in the sciences, have important implications for the gifted. In general, these developments have been largely in the direction of concept formation in contrast with the rote memorization of facts. The following are indicative of work under way. In mathematics, the University of Illinois Committee on School Mathematics has been engaged in introducing modern mathematics into the secondary school curriculum; the National Council of Teachers of Mathematics has published the guidebook *Mathematics for the Academically Talented Student in Secondary School;* and the School Mathematics Study Group has produced advanced self-study materials (for highly gifted students) in its New Mathematical Library.

In physics, the Physical Science Study Committee, initiated at the Massachusetts Institute of Technology in 1957, has developed a new secondary-level physics course; and the American Institute of Physics has published a *Handbook* and *Apparatus Drawing* for use in secondary schools.

In biology, the Biological Sciences Curriculum Study, organized in 1958, has produced a series of study guides and workbooks—one set each on "Molecular Structure," "Community Problems," and "Cellular Structure." In chemistry, the Chemical Education Materials Study was initiated in California in 1960; and the Chemical Bond Approach Project was developed at Reed College.

A major concern of the Language Development Program authorized by Title VI of the National Defense Education Act of 1958 has been the creation of specialized materials to improve instruction in modern foreign languages. In the main, curriculum adaptations reflect increased emphasis on the audio-lingual approach. The foreign language laboratories developed to implement this approach are especially advantageous to the gifted, enabling them to go as far and as fast as their motivation and talent will allow and to study languages not otherwise available. One of the many efforts in this area is the Chinese-Mandarin Instructional Materials Development Project at San Francisco State College.

Less publicized, but of vital significance, are curriculum studies and developments in the social sciences, with a major conflict between the separate discipline approach and the integrated course approach. Illustrative of systematic efforts in this area are the U.S. Office of Education Project Social Studies, the World History Project at Northwestern University, and the North Central Association of Colleges and Secondary Schools Foreign Relations Project.

Innovations in the English curriculum are largely in the experimental stages, though under the impetus of the U.S. Office of Education Project English and the Office publication *Needed Research in the Teaching of English* (Proceedings of a Project English Research Conference), as well as such groups as the National Council of Teachers of English and the Modern Language Association, developments are forthcoming. The National Education Association's English Composition Laboratory Project and the Commission on English of the College Entrance Examination Board represent further efforts toward improvement. Already structural linguistics, the history of language, and new approaches to literary criticism have been introduced into the curriculum of the more able students.

Frequently curriculum development has grown out of the recognized need to provide more challenging programs for the gifted. These efforts, however, have usually led to improved educational opportunities for the entire student body.

A Regional Effort—Cooperative Action. In the spring of 1958, a committee representing the Commission on Research and Service of the North Central Association of Colleges and Secondary Schools selected 100 high schools to participate in its Superior and Talented Student Project. The schools chosen for the project were deemed to have a sizable population of students of relatively high ability who were not being adequately challenged and educated. Each school was pledged to a program of action specifically applicable to its student body, facilities—both human and material—and purposes.

As a regional effort the project was directed to the establishment of a covenant by each project school with all project schools and with the NCA to systematically improve the educational environment for its talented students. The project was and is focused upon guiding the able student to develop his special talents in terms of personal interests and goals and society's needs and demands. Each school can and does see its role in such a project as unique.

Today the STS Project is interregional. No professional staff is now attached to the project; but all of the regional accrediting associations in the nation, except the Middle States Association, are actively promoting it in their schools. In addition to the NCA, the Southern Association of Colleges and Secondary Schools in particular is finding the STS pattern appropriate and the project publications[3] useful. The impact of the STS Project on practice can best be noted in schools where improved educational provisions for talent development have become an integral and accepted part of the school program.

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[3] Publications, including *Building a Program for Superior and Talented High School Students,* can be obtained from the STS Project Office, 5454 South Shore Drive, Chicago 15, Illinois.

State Efforts—Professional Leadership. Increasing concern for the education of gifted and talented students has led a dozen states and Puerto Rico to establish within the state departments of education one or more full-time directorships of programs for the gifted. Another 22 states report personnel devoting part of their time in this area. Directors perform such varied services as organizing in-service programs for teachers of gifted children, serving as consultants to teachers and administrators, disseminating the latest research findings on talent development, cooperating with institutions of higher education to help solve problems related to the education of the gifted, and conducting demonstrations on effective practices for gifted students.

Full-time directors have assembled at two annual conferences convened by the U. S. Office of Education Talent Development Project and in March 1963 formally established The Council of State Directors of Programs for the Gifted to promote more effective state-level leadership for programs for gifted students.

Activities in Illinois are illustrative of a forward-moving state program for gifted children. As part of the Illinois Special Study Project for Gifted Children, several school districts in the state have cooperated with the Office of the Superintendent of Public Instruction in a study of programs and procedures that might be used for children of various gifts and talents. To provide for implementing the recommendations of this project, a bill appropriating $6,750,000 for the 1963-65 biennium was signed into law. A Department of Program Development for Gifted Children has now been established within the Office of the Superintendent of Public Instruction in Illinois to administer the new program.

The evolution of the "mentally gifted minor" program in California is another good example of state progress. In 1957 the California Legislature authorized the Department of Education to conduct a study of educational programs for the gifted and to submit a final report on or before January 1, 1961. Legislation incorporating the recommendations of the study group was drafted and then approved in June of 1961. Provisions were thus made for (1) reimbursement by the Superintendent of Public Instruction to school districts claiming excess expenses incurred in providing programs for gifted minors and (2) the establishment of full-time personnel in the Department of Education to provide a "supervision and consultant service to assist and advise school districts in the establishment, development, and improvement of programs for gifted minors."[4]

Evidence of growth in the California program lies in the fact that there was approximately a 76 percent increase in the number of mentally gifted minors enrolled in approved programs during the 1962-1963 school year as compared with the 1961-1962 enrollment. Also, the Superintendent of Public Instruction has indicated to the press that he will work toward raising excess-cost reimbursement from $40 to $240 for each mentally gifted minor in an approved school program.

Another significant contribution to talent development was made by The Governor's School of North Carolina, an eight-week residential summer program for high school juniors, held in Winston-Salem in 1963. The school provided a variety of unique educational opportunities in the principal academic subject areas and in the fine and performing arts to approximately 400 highly gifted North Carolina students. This school, to be repeated in the summers of 1964 and 1965, will serve as a model for schools wishing to improve their own programs for the gifted.

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[4] Chapter 883 of the Assembly Bill 362, an act to add Article Fourteen (Commencing at Section 6421) to Chapter Six, Division 6, of the Education Code.

A Local Effort—Visibility. Illustrative of cooperative efforts involving lay and professional personnel is the conference on The Academically Talented which was held in Memphis, Tennessee, March 22-24, 1962. Sponsored by the Nemours Foundation and the Tennessee Council for Handicapped Children, Inc., the conference was coordinated by the Junior League of Greater Memphis and involved 11 cooperating organizations.

Wide publicity was given the conference through newspapers, radio, television, and billboards; and attendance exceeded expectations. Several hundred participants were involved in workshop sessions and in enthusiastic, enlightened discussions. The conference goals, which were (1) to arouse interest in the education of the academically talented, (2) to inform professional and lay people about current theory and practice, (3) to suggest specific pilot projects, and (4) to encourage long-range programs, were furthered by the publication of a widely distributed conference report, which included 15 major speeches by national and local leaders in talent development. A similar conference on The Gifted Child was held in Norfolk, Virginia, March 20-21, 1963.

A National Effort—Perspective. The role of the Federal Government in talent development must not be overlooked. Although specialists in the U.S. Office of Education had long served as consultants, published materials, and conducted and encouraged research on the education of the gifted and talented, in 1962 the Office launched its Talent Development Project.[5]

This project is designed to coordinate efforts within the U.S. Office of Education and to make possible more effective interaction between the Office and the many professional, governmental, and lay groups which are concerned with the identification and nurture of talent. In the main the goals of the Talent Development Project can be placed in these broad categories:

- Gathering, processing, and distributing information.
- Suggesting, encouraging, sponsoring, and conducting research.
- Stimulating interest, promoting action, and providing assistance in the planning and implementation of effective practices in talent development.

Project goals are being realized in many ways. In its collection-dissemination role, the project has, for example, published a *Directory of State Department of Education Personnel Directly Concerned with Programs or Provisions for the Gifted* and a conference report *Talent—A State's Resource, A State's Responsibility*, covering such topics as "Selected Problems Facing State Directors of Programs for the Gifted" and "Evolution of State Directorships of Programs for the Gifted." Additional Office publications relevant to talent development include *The Gifted Student; Guidance for the Underachiever with Superior Ability;* and *Talent and Tomorrow's Teachers: The Honors Approach.* Among other activities in the planning stages is the publication of an annotated bibliography of materials on talent development which have been produced by state departments of education and local schools and school systems.

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[5] Note categories of talent suggested earlier in this statement.

The research goal is met largely through the Cooperative Research Program of the Office. This program has funded approximately 75 projects concerned with talent development, such as "Creative Thinking in Children at the Junior High School Level," "The Discovery and Guidance of Superior Students," and "A Study of Non-Intellectual Factors in Superior, Average, and Slow High School Students."

The Cooperative Research Program also supports two Demonstration Centers, which exhibit teaching techniques, curriculum materials, and administrative practices effective in talent identification and development. The Center, administered by staff members of the University of Illinois, demonstrates, among other things, secondary school programs for gifted students in English, social science, mathematics, and science. At the Center, administered by California State Department of Education directors of programs for the gifted, demonstrations include differential programming in enrichment, acceleration, counseling and special classes for gifted pupils in grades 1-9.

The project, in order to stimulate action and provide assistance in planning and implementing effective practices in talent development, has sponsored a number of conferences, in addition to fulfilling its role of providing consultative services. The project has convened a national conference of representatives of professional organizations directly concerned with efforts in behalf of the gifted; two conferences of full-time state department of education directors of programs for the gifted, at the second of which The Council of State Directors of Programs for the Gifted was established; and a regional conference for professional and lay persons.

The Talent Development Project is designed to consider high ability in many areas of human endeavor and at all educational levels. Talent development must be initiated in the elementary schools and must not suffer from subsequent discontinuities.

A Note

In a complex and diverse educational system, there is no single answer to the question "What is being done about the talented student at the secondary school level?" Some items have been noted in this article; more detailed examples are given in the following pages of this issue of the ICSS newsletter. These serve but to describe the milieu from which college honors students can be expected to emerge; they must not be used to draw undue generalizations.

The college effort to develop talent must be a continuation of the secondary school effort. College honors programs must be built upon knowledge of prior experience. College personnel must exhibit a willingness, even an eagerness, to contribute to the secondary school effort. In the final analysis there must be for the talented the perpetual stretching of the mind and the imagination and the developing of skills that will free these individuals from the petty and the trivial.

Curriculum Development for Able High School Students at Carnegie Institute of Technology

EDWIN FENTON*

During the last five years, Carnegie Institute of Technology has become a national leader in the development of curriculum for able high school students. Our experience in four major cooperative projects with neighboring schools has resulted in the development of a tested technique for writing new curricular materials which may be useful in other settings.

THE FOUR MAJOR PROJECTS

I. The Advanced Placement Program

Five grants totaling $191,000 from the Fund for the Advancement of Education and the A. W. Mellon Educational and Charitable Trust have financed a cooperative program for the development of advanced placement courses in English and history between the Carnegie Institute of Technology and 34 public and private secondary schools in and near Pittsburgh. This program is now in its fifth year. Under it, 150 teachers have attended one-month cooperative summer institutes at Carnegie Tech where they worked with Carnegie Tech professors to develop college-level courses of study and new methods of teaching for their best students. High school principals and counselors have also been involved in this program.

During the academic year 1963-1964 more than twelve hundred students are enrolled in advanced placement history and English courses in schools involved in the CIT cooperative project. In several schools, the scores earned on Advanced Placement Examinations have been among the best of any public high school in the nation. As part of the advanced placement project, the staff developed new courses for able students in tenth and eleventh grades in order to prepare them for college-level work as juniors and seniors. This valuable experience encouraged Tech to apply for grants to develop entirely new curricula under funds available from Project English and Project Social Studies.

II. Project English

In April 1962 Carnegie Tech was awarded a grant of $220,000 from the Cooperative Research Branch of the Department of Health, Education, and Welfare to establish a Curriculum Development Center for able college-bound students enrolled in English classes in grades ten through twelve. The program has five major objectives:

1. To develop a composition program for grades ten through twelve which will lead to the maturation of writing skills in clearly defined, sequential steps.

2. To develop a reading program for grades ten through twelve which, like the program in composition, will develop sequentially in three years the reading skills essential to excellent work in college.

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*Co-Director, Social Studies Curriculum Development Center, Carnegie Institute of Technology.

3. To develop in final form lists of readings, syllabi for composition, teachers' manuals for both reading and composition, and other teaching materials for the entire sequence of three courses.

4. To demonstrate the utility of the reading and writing programs by installing them in six senior high schools of diverse types and sizes in the Greater Pittsburgh area.

5. To evaluate the reading and writing programs through tests given in the cooperating schools.

A long-range goal of the total program is the establishment of a set of standards for high school English which colleges can use to revise course offerings given to their freshmen so that learning will continue to be sequential and cumulative.

The three courses in this sequence have all been written. Last year the tenth grade course was taught in five cooperating high schools; and during the present year the new eleventh and twelfth grade courses will be tried out and revised.

III. Project Social Studies

In March 1963 the Cooperative Research Branch of the Department of Health, Education, and Welfare announced a grant of $250,000 to Carnegie Tech for the establishment of a Curriculum Development Center in the Social Studies. During the next four academic years, teams of writers and teachers from Carnegie Tech and the Pittsburgh Public Schools will write and test a new sequential and cumulative curriculum for able students enrolled in grades nine through twelve. A careful evaluation using control groups will take place in five Pittsburgh high schools where these new courses will be installed. In September 1963 eight classes of students began to use the new ninth grade material written by a team of high school and college teachers during the summer of 1963. The next three courses in the series will be written in succeeding summers and tried out, in turn, in the classroom.

IV. The Math-Science Project

In January 1963 Carnegie Tech received grants totaling $110,000 from the National Science Foundation and the A. W. Mellon Educational and Charitable Trust for the development of basic and advanced courses for able students in biology, chemistry, and mathematics. Under the terms of this grant, three college professors and three high school teachers worked half-time on new courses during the spring semester of the present academic year. The biologists adapted the work of the Biological Sciences Study Committee for ninth-grade students and began to develop an advanced placement course for the eleventh grade. The chemists adapted course materials from the Chemical Education Material Study for able tenth-graders and outlined an advanced placement course for twelfth grade. The mathematicians wrote a twelfth-grade advanced placement calculus course to cap the sequence of mathematics courses for able students which begins with algebra in the eighth grade.

During the summer of 1963, 30 Pittsburgh high school teachers attended summer institutes at Carnegie Tech, where they studied the new science and math courses, developed techniques to teach them, and filled in the outlines written during the spring. These courses were installed in five Pittsburgh high schools in September 1953. Since 4 seventh and eighth grade teachers attended the summer institute in preparation for the development of new junior high school science courses, this project will result ultimately in the development of a cumulative and sequential series of courses in the sciences and mathematics for able students in grades seven through twelve.

COMMON ELEMENTS IN PROGRAMS

A common approach to the development of curriculum and training of teachers characterizes these four projects. This approach includes the following major elements:

I. College-High School Partnership.

Each project has been a full partnership between Carnegie Tech and neighboring high schools. In most of the projects, co-directors with equal authority have been appointed from the schools and from the university. Faculty have been drawn from both groups. Through this practice the unique talent and experience of teacher-scholars from each level have been made available to the project.

II. Participation by Teachers

All of the teachers who have used materials developed by the four curriculum projects have participated in summer institutes during which new materials were prepared or older materials revised. These teachers actually wrote new materials, edited already published works for high school use, drew up courses of study, prepared lesson plans, wrote examinations, and made tapes for the tape recorder or transparencies for the overhead projector. This experience in developing materials and studying the psychological principles upon which materials were based has been extremely valuable in-service training for teachers.

III. Trial and Revision of the Courses

Each new course developed by these four projects has been, is being, or will be tried out in the schools by high school teachers and, in most cases, CIT faculty members on leave from their university posts. Each new course is revised by staff members as they teach it. In most cases, a CIT professor and a high school teacher have joint responsibility for final revisions. Regular meetings of the entire teaching staff of each project give suggestions to the project directors. Both Project English and Project Social Studies have psychometricians on their staff who are responsible for evaluating the results of the projects and comparing them to the work of students in control groups.

IV. Inductive Teaching

The courses developed under these four projects all stress techniques of inductive teaching. The materials which have been developed all have this objective in view. Since teachers regularly prepare lesson plans, they are forced to cope with the new problems which inductive teaching presents. CIT faculty members on loan to the projects frequently take classes for their high school colleagues to demonstrate inductive teaching techniques.

V. The Inclusion of Recent Research

Each project has attempted to close the regrettable gap which has so long existed between what has been discovered in the latest research in the field and what is being taught in the high schools. The courses now developed include material at the forefront of research in each field. In some cases they have incorporated discoveries and techniques of teaching which have not yet been introduced into some college courses.

In October 1963 the Fund for the Advancement of Education announced a grant of $228,350 to Carnegie Tech for a Master of Arts Program. Designed essentially for teachers interested in the new curricula, the MA program will stress firm grasp of a subject matter specialty. A new sequence of pioneering courses in professional education will be written for CIT undergraduates in order to free their graduate study for intensive work in subject matter. They will also have an opportunity to work as part-time teachers under careful supervision from CIT staff as they pursue graduate study.

The PITTSBURGH Curriculum Continuity Demonstration

J. STEELE GOW, JR.*

Talented students in Pittsburgh's Frick Elementary and Schenley High Schools now are pursuing studies, from kindergarten into college, on a curricular continuum designed and tested by joint school-and-university teams.

The Pittsburgh Public Schools and the University of Pittsburgh undertook the Curriculum Continuity Demonstration (CCD) four years ago at the suggestion of a Regional Commission on Educational Coordination. The commission, which is comprised of college presidents, school superintendents, and other leading educators of the Upper Ohio Valley, had conducted a year-long study of gaps and duplications in the educational system and had recommended steps to improve continuity of learning experiences especially for able students who would be progressing to higher education. The CCD was launched to develop and to demonstrate school programs that provide such continuity.

The high school segment of the continuum was developed first, and some of those courses—in English, French, mathematics, natural science, and social science-history—have been in operation for as long as three years, undergoing annual revision and refinement based on experience with them in the field-testing at Schenley High School. The elementary-junior high segment is in full operation at Frick School only in the field of social studies at this time, although parts of the other four subject sequences are being spot tested and all are scheduled for full implementation in another year.

The aim of the CCD is to provide continuous learning experiences through which able students can progress, each at his own best pace, without the restraints of the traditional lock-step advancement. Flexible progression, it is believed, is facilitated and encouraged by carefully working out the sequence of instructional units and by specifying, in terms of measurable student behavior, the sequence of learning steps the student is to take. When a teacher knows what goes before and what comes after that part of the continuum designated as her "grade," she can readily adapt instruction to the different needs of different students.

In order to develop model curricula for this purpose, school teachers and supervisors from various grade levels were teamed with university professors of the basic disciplines and school of education specialists to formulate goals and sketch out the overall kindergarten-to-college program. Then teams, ranging in size from three to 14 persons, were assigned to work out the detailed character of parts of the program, each team having representatives from several levels.

When students are ready for college level study in any particular subject area they begin such studies part-time at the university while continuing to complete their high school programs. Some have been skipping their senior year of high school entirely, and others have been taking from three to 12 college credits while still in high school. These youngsters have averaged better than B in their early college courses.

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The principal field-testing schools, Frick and Schenley, are large, central-city schools with heterogeneous student populations, racially mixed and with a wide range of ability levels. The CCD has been conducted in these particular schools in order to demonstrate how abler students can be challenged and given full opportunity to exercise their abilities in the context of the comprehensive public school which also must provide appropriate programs for the academically less able. The conviction has been that only a demonstration conducted in such a setting would have validity as a model for most big-city schools.

Despite the practical difficulties involved in such a setting, the demonstration has been persuasive, judging by the way the program's materials and practices are spreading to other schools in the Pittsburgh system and beyond. Parts of the CCD tested at Schenley High already have been picked up by 12 other high schools in Pittsburgh, and the materials have been incorporated in programs of numerous other city school systems, not only in this country but as far away as the Union of South Africa. The elementary materials, as they are completed and tested, are expected to be disseminated similarly.

Within Pittsburgh the process of curriculum revision in CCD is continuous. As changes are made in curricula at one level they trigger changes at the next level, so that none of the course syllabi, study guides, tapes, pattern drills, or other materials are considered finished products. As this would suggest, the practice of inter-level collaboration on curriculum development is, therefore, also a continuing process. Indeed, one of the principal objectives of CCD is to establish school-and-university collaboration as an accepted and permanent practice.

Largely as an outgrowth of the CCD experience, the University of Pittsburgh, the Pittsburgh Schools, several neighboring colleges, and nearly one hundred school systems in the Greater Pittsburgh area recently have joined together in a Learning Research and Development Center. Also associated with them in this new and larger venture are the American Institute for Research (which conducts the nationwide Project TALENT) and the Pennsylvania Department of Public Instruction.

The CCD, like most other projects concerned primarily with the needs of the superior student, has had its impact on programs for other students as well. For instance, while careful sequencing of learnings seemed at first to be especially important for those abler students who could progress faster and farther along the continuum to higher education, teachers soon were adapting the sequences to the needs of less able students. The need for curriculum continuity is most readily apparent in the case of the abler students. However, the need is just as real for the others, and teachers quickly follow the lead given by the superior student program in the school.

Perhaps the most important characteristic of the CCD curriculum development, both as it is designed for the superior student and as it is adapted for other students, is the emphasis placed upon measuring and managing student progress not simply in terms of time exposed to a subject but in terms of modifications made in the student's behavioral repertoire, in what he knows and is able to do.

The instructions given to the CCD teams of university professors and school teachers and supervisors are to forget at first about grade-level designations and to specify what the student should learn to understand and be able to do step by step, to design instructional programs and select or produce materials that will foster the specified learning steps, and only then to accommodate the administrative bookkeeping need for grade-level designations.

Of course, this is more easily said than done, and the CCD by no means has fully achieved its aims. The greatest difficulty encountered has been that of specifying the student behaviors to be developed at each step along the continuum. There has been a constant temptation for the curriculum teams to lapse back into the practice of defining topics to be "covered" and activities to be provided and to avoid the challenging task of specifying what has to happen in the learner.

Indeed, this problem was so evident throughout the first three years of the CCD that the Regional Commission devoted one of its sessions entirely to the matter and called for help from such advisors as Dr. Ralph W. Tyler, Director of the Center for Advanced Study in the Behavioral Sciences; Dr. David Krathwohl, of the University of Illinois "taxonomy of educational objectives" study; Dr. Robert Gagne, of the American Institute of Research; and Dr. Robert Glaser, Director of Research for the University of Pittsburgh's new Learning Research and Development Center. The report of their deliberations, which should be helpful to others undertaking similar curriculum development tasks, is to be published under the title *Defining Educational Objectives*, edited by Dr. C. M. Lindvall.

The Curriculum Continuity Demonstration is directed by a joint Pittsburgh Schools and University of Pittsburgh staff of four persons (J. S. Gow, Jr. and C. M. Lindvall, of the University, Norma Watters and Ann Bartley, of the City Schools), who are responsible to a joint board of top officials of the two institutions. Several hundred school and university persons have been engaged in the curriculum preparation and in the field testing and demonstration.

Supplementary financial support has been received first from the Buhl Foundation in Pittsburgh and later from the Fund for the Advancement of Education. Present grant support has one more year to run, by which time the full kindergarten-to-college continuum in the five academic core subjects is scheduled to be operational. With the dissemination that already is occurring the program is expected thereafter to be self-sustaining and to continue as a part of the larger collaborative venture represented by the new Learning Research and Development Center.

Meanwhile, as more and more of the CCD is implemented, Pittsburgh's abler school children are being given the opportunity to advance in their learning, each at his own best pace, experiencing continuously the optimal intellectual challenge to which each is capable of responding effectively. When the program is fully operational in all the basic subject-matter areas, a superior student will be able to progress from kindergarten to college-level study in one, two, or three years less time than is customarily required and do so without skipping grades and without awkward gaps and duplications in his preparation.

Furthermore, if present indications are to be trusted, the continuous curriculum through which the student progresses will be undergoing continuous modernization in line with advances on the frontiers of knowledge, through the practice of school-and-university collaboration. The superior student, by the needs his high ability has made apparent, in effect has forced upon us the concept of a single educational community.

ENRICHMENT PROGRAM FOR HIGH SCHOOLS IN PUERTO RICO

ANGEL C. QUINTERO AL FARO, VICTOR MELENDEZ, MARIO ANGLADA*

Educational programs in rapidly developing countries face the need for providing education of high standards with a minimum of resources. This problem can only be met by a more effective combination of these resources. This principle is often not followed and standards are lowered; in other cases rigid standards and methods simply limit the available education to a select group.

The Department of Education of the Commonwealth of Puerto Rico began a new high school program in 1960 which aims to develop new ways for providing a general education of high quality by combining resources; reorganizing the curriculum, the teaching, and the learning experiences in a different manner; and introducing new media like TV and teaching machines. This experience may open new ways for the future development of high school education in Puerto Rico and in Latin America.

The educational problem, presented in the effort to harmonize scarce resources, educational demands, and desirable standards, is illustrated in a review of the educational services, and their costs, which the Puerto Rican society offers to its citizens. In 1960 the Department of Education had a total budget of $76,258,000 or, roughly twenty-eight per cent of the Commonwealth's budget. This budget was employed to provide schooling for 387,700 students in elementary schools; 124,300 in junior high schools; 66,100 students in senior high schools; and 36,700 in various levels of adult education. This made a total of 608,800 students in the Commonwealth's public school system to whom educational and related services were given.

The budget available was in no way sufficient to cover the necessary minimum developments envisaged. With this end in view, the department solicited a budget increase of $16,625,277 for 1961. This represents a figure of almost one hundred per cent of the total amount which the Commonwealth's government could actually devote to augment the budgets of all its branches. These facts show clearly the need for experimenting with new ways in which more can be achieved for less expense.

The experimental program has been initially directed to the academically talented. The aim is for these young people to achieve in the last four years of secondary education what usually takes five and one-half years—that is, an academic achievement equivalent to the ninth through twelfth grades plus the equivalent of one and one-half years of general education which they now acquire at the college level.

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*This article was prepared for *The Superior Student* by the above gentlemen in the Department of Education, *Commonwealth of Puerto Rico*, who are respectively: Undersecretary of Education, Director of Experimental Program in the High Schools, and Director of Curriculum.

There were various reasons for making this choice. From the practical point of view it was more convenient to begin at this level. The educational system had acquired experience in offering advanced courses for selected groups of twelfth grade students, and this experience was in many ways transferable to this new program. There was also doubt about how far all students could profit from this type of educational experience. It was always our hypothesis that all students could profit from it, but there was little doubt that the best could. Finally, it was this particular group of students, the more intellectually able, who had usually been disregarded by teachers and administrators in the educational organization.

The special high school program attempts to achieve these objectives by reorganization of the two major aspects of the secondary schools' program. First, it would reorganize and bring to a new, higher level the educational content of the secondary schools' program. Second, it would reorganize the amount and the forms of time spent by students and teachers in their learning and teaching experiences.

Perhaps the most visible aspect of this project is its modification of classroom time and organization. Student instruction in regular-size classes (35 to 40 students) is reduced from the present 27 to 20 hours per week. The remaining seven hours are devoted to large group instruction, seminars, library, laboratory, and other individual work and educational activities.

For the students the immediate advantage is that time is provided to satisfy needs recognized by all our education leaders. The students read more and are guided into accepting responsibility for increasing amounts of independent work. Supervised library work is one of the central activities in this program. Furthermore, during the school week the student is exposed to a wider variety of learning experiences appropriate to the different types of materials and educational tasks that he faces.

The program also liberates the teachers' time. The average teacher now has a load of 30 class-hours of teaching per week. In this situation this is limited to 24 hours: 18 hours of direct classroom instruction and about 6 hours for attending large group classes, seminars, and sessions with individual students. This liberated teacher-time allows for better class preparation on the part of the teacher and, more particularly, it is employed for much needed in-service training which is an important part of this program. It has been recommended that teachers receive college credit for the training acquired in this program.

As stated before, the basic, central aim of the new program is to develop new ways for providing a general education of high quality for the student. This includes in its scope the two main fields of human knowledge. On the one hand, it deals with the understanding of man's cultural creations and the intellectual tools he employs to achieve them. This field includes the knowledge that is usually classified under the humanities, the social sciences, and the languages—Spanish and English. Within the program these subjects are presented from both a historical and problematical perspective.

The natural sciences constitute the other field encompassed in the program. This aspect is directed towards the students' understanding of man's efforts to study the natural world in which he lives. The natural sciences sequence includes both the physical and the biological sciences and the mathematical tools employed for the understanding of natural objects. This course sequence also employs the historical and problematic manner of presentation. A limited number of crucial questions about nature are selected for the sequence, and man's theoretical explanations and solutions are to be explored as they have appeared in time. These courses are accompanied by laboratory work which is somewhat different and more challenging to the students' minds than the usual high school lab exercises.

The plan is designed to provide a series of learning opportunities for approximately 1,200 students in each school year in nine high schools throughout the island. At the end of four years the program will have reached 4,800 students in these major urban areas. This project also provides for evaluation of its impact on the students' learning and personality.

What was the stimulus for this distinctive educational program? As has been stated before, since 1957 the Department of Education, in collaboration with three of the island universities, has fostered a program in which the more able twelfth grade high school students take first-year university courses. Even though the effectiveness of this program has been sufficiently demonstrated, the feeling was that a deeper and more significant experiment would be welcome. Instead of advanced courses for high school students, there was felt the need of an articulated program with more advanced work beginning early in high school. A series of studies on the educational system have also pointed out the need for a re-examination of the subject matter content of the curriculum and the methods used in secondary school instruction. These studies indicated that high school courses tended to be mainly informational in nature, in many cases superficial, with very little articulation among the courses. A program of greater depth was recommended, in which content fields would be interrelated, and in which instructional methods would strive to develop within the student his capacities for expression, reflection, and judgment.

With these findings and recommendations as a base, work was begun on designing and testing this type of program. Practical not ideal solutions were sought, and the changes considered were those deemed feasible and within the means of the Puerto Rican school.

Let us take the teaching of history as an example of what was done. A course in general history, which covered in a very superficial form an account of events from the more primitive times to the most recent, was offered in the tenth grade, with classes meeting for five periods weekly. This course made use of a textbook, typical of such courses, which had been translated from English to Spanish.

A decision was made to change this course so that it is now given in two years—the ninth and tenth grades—with classes meeting three periods weekly. In place of a single text, a number of inexpensive editions of books in Spanish are utilized. A similar reduction is made in the schedule for Spanish and English courses so that instead of 15 periods of classes each week, students are only required to take nine. Six periods are now available for other purposes. We asked ourselves the question: How should we use this time in a more profitable way?

Three of the available six hours are devoted to a seminar which centers around discussions of some of the major events, principal works, and outstanding figures in the history of western civilization. To us one of the defects of the teaching of history has been its panoramic character in which the development of a civilization, the rise and fall of nations, the significant events and persons are presented to the students much in the same way that an observer in an airplane views a city in glimpses from afar. Extending this simile further, we decided to make stops at determined points in history which would offer the student "guide-posts." The two-year seminar performs this function. Greece during the fifth century B.C. is taken as the first stop. Selections from Herodotus, Thucydides, Socrates' *Apology,* and several Greek dramatic works are read and discussed in the seminar. Thus, the student has an opportunity to probe deeper and more profoundly than is possible in any one textbook into a given crucial area of history. The student not only contemplates history, he repeats, to a degree, the activity of an historian in his review of source materials. Furthermore, he can become directly acquainted with those works which focus with great profundity and insight on ever-present human problems. Socrates and Pericles are seen as individulas, their virtues and defects are studied and examined in the same fashion as they were studied and examined by their contemporaries.

Another characteristic of the seminar is that the teachers of history, English, and Spanish attend the seminar meetings. Also university personnel, who have previously taught first-year college courses in high school, are brought in as consultants. The program in this manner provides a mechanism for in-service teacher education, while at the same time noticeably improving the curriculum. Furthermore, the courses in history, English, and Spanish are structured so that their content is interrelated, and the seminar becomes a coordinating agent for all three.

It is expected, therefore, that the program will stimulate discussion of reforms which should favorably affect the whole secondary school system.

Jackson State

Enrichment Program for Students from Negro High Schools

LEE E. WILLIAMS*

Nothing is more powerful than the right idea at the right time, and there is no "adequate defense, except stupidity, against the impact of a new idea." These truths have been revealed in the work being done in *Project Enrichment* at Jackson State College with superior and talented students from high schools throughout the state of Mississippi.

The work with superior and talented high-school students, called Continuing Education Enrichment Program (CEEP) began in March 1962 with 36 students screened from the top 100 ninth, tenth, and eleventh grade students from five high schools in three counties. These students were selected on the recommendation of teachers, counselors, and principals and then screened further by tests at the Jackson State College. They met regularly at the college on Saturdays for one year with some of the best college faculty members as instructors and with selected high-school teachers as observers. When this group completed its year's work and received certificates of award, it was followed by another group of 36 students similarly selected but from a wider area in Mississippi and from more than one hundred students who will follow the same procedure on Saturdays for a year as did the first group. Later, a third group selected from approximately five hundred high-school students from all parts of Mississippi attended the six-weeks workshop in the summer of 1963. The three groups show not only that the college has touched more than one hundred high-school students, but that it has stimulated many high-school teachers to participate in a program of selection, identification, motivation, and guidance in many high schools. This is true because the college did conduct parallel workshops for high-school teachers for whom the high-school students in the Continuing Enrichment Program served as a laboratory.

What the participants in CEEP and in the workshops said, did, and thought; whom they met; how they watched each other acquire a desirable degree of what one teacher described as togetherness; and how they watched each other grow and develop under the personal and individual guidance of high-school teachers in as rich an environment as it was possible to make for them; and lastly, how they discovered the magic of drawing out each mind is told in this account.

WHAT THEY SAID

"Go, seeker . . . and you will find us burning in the night . . . the (Negro) boy sits and pores upon his book . . . And for what? For what this agony of concentration? For what this hell of effort? For what this intense withdrawal? For what? Because, brother, he is burning in the night . . . So then, to every man his chance--to every man, regardless of his birth, his shining, golden opportunity—to every man the right to live, to work to be himself, and to become whatever thing his manhood and his vision can combine to make him—this, seeker, is the promise of America."

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It was, of course, Thomas Wolfe speaking, but then Thomas Wolfe had become a part of the thinking of the high-school group. So, too, had the expression "the rebel Antigone who had defied a king rather than betray her own conscience" become a part of group thinking. This identification with the rebel Antigone in part was made as superior ninth, tenth, and eleventh grade students listened to lectures on Greek dramas just as they would listen to a television or radio program; knowing as they did so that listening, reading, and writing were inextricably interwoven; knowing, too, that as the Greek dramas became real to them the past was speaking to them in the present from a time when the enduring ideals of Western Civilization were being born.

WHAT THEY DID

On Saturdays, Project Enrichment participants, both students and teachers, worked in the traditional fields of science and humanities. In the field of science, they worked with the complete scientific kits and films developed by the Physical Science Study Committee. In the humanities, students of one group were exposed, through books, paintings, slides, films, and records to the art, poetry, and music of the Nineteenth Century—and to be specific—to work of the Romantic composers, writers, and painters . . . Over the summer months, the students were given twelve "romantic" novels of the Nineteenth Century with a book of verse of the Romantic English and American Poets . . . For the following months, students will be grouped according to their special preferences and talents within the framework of the Romantic Poets and the 12 novels. Thus, with each novel written by a Nineteenth Century writer, and with much poetry from the Romantic Movement, the students will be stimulated to further creativity. . . .

The summer of 1963 provided the most exciting phase of the program with superior and talented students and their teachers. The activities were many and unusual. First, students and teachers shared for five weeks a tele-class with Dr. Moses Hadas, the distinguished professor of Greek classics from Columbia University. From nine to ten each morning, either as auditors or as officially registered students for academic credit, they heard Dr. Hadas lecture over the telephone on 23 plays by Aescylus, Euripides, Sophocles and others. To the younger students, the classics became as real as the westerns or the comics and far more satisfying and provocative. A librarian had said the Greek classical drama was too violent and passionate for adolescents, but the summer's work revealed that adolescents preferred the violence and passion of Greek dramas to that of comics and television shows. To the teachers the classics opened up a new dimension of general culture. They provided acquaintance with a distinguished teacher of high intelligence who made teachers and students think; who demonstrated the wise choice of the dramatic episode; who kindled in teacher and students enthusiasm by his scholarship and by the intensity of his own feeling for a way of life that "once shook a narrow world." Furthermore, the classics provided a part of the liberal education some teachers had missed. The experimental nature of the classical-drama tele-class was a challenge to teachers to dare and to experiment in projects in their own schools. Under the sharp excitement of new ideas lifted out by the Greek classical scholar, Dr. Hadas, and by other instructors, one teacher said, "Never again will we teach just as we have taught, not even if we have the same textbooks, no textbooks at all, or used textbooks. Ever after this experience," she continued, "we will be forced to illuminate what we teach—to make it glow and sparkle."

Second, teachers and students lunched, dined, talked informally with people who could help them project future images of themselves; that is, people who could serve as models, with whom they could identify, whose image could help them project a future image of their own; such as professors from Stephens College—presidents and other administrative officers of Wilberforce University, Langston University, Bishop College, Morehouse College, and Alabama State College, Knoxville College, Tuskegee Institute, and LeMoyne College who had come to Jackson State College to observe the tele-class with Dr. Hadas.

Third, together teachers and students toured Keesler Air Force Base—seeing the use of teaching machines, closed-circuit television and all phases of electronics in teaching. In Biloxi where Keesler Air Force Base is located, they saw too, a community, its PTA, its USO, and many of its citizens mobilize themselves into action to honor teachers and students for their efforts to use the self-discipline, the self-instruction necessary for making themselves into scholars. In a way, the community of Biloxi awarded the students letters in intellectual pursuits just as athletes are awarded letters in sports.

Fourth, teachers and students conducted a conference (1) to encourage qualified schools to affiliate with the Superior and Talented Students Project and (2) to further stimulate schools to identify and provide for the superior and talented students enriching experiences. Present at this conference were principals of schools who had already applied for affiliation with the Southern Association Superior and Talented Student movement, those who were interested in applying for STS affiliation, and those who were observing in order to arouse interest in themselves in affiliation. To the high-school students and teachers, affiliation with the *Superior and Talented Project* was a status symbol. Like the winning of $1000 national scholarship by a CEEP student; like the attendence by CEEP students at seminars in Chicago, Washington, New York; like the possible participation by CEEP in International Affairs Program and in United States Senate Youth Program; STS affiliation symbolized one more step in the disappearance of a tragic apartness and inequality which, as Lomax says, "involve not only denial of opportunities but prescribe the inferior standards exacted of Negroes by white people and serve as an excuse by Negroes themselves in failing to demand the higher standards of themselves" which are a necessary prelude to entrance in the mainstream of American life.

Fifth, among the other enriching experiences of teachers and CEEP high-school students were the spirited discussions during amplified telephone interviews with the following persons: Edward R. Murrow, Marquis Childs, Abraham Ribicoff, Dean Lucile Allen, of Stanford University, David D. Henry, President of University of Illinois, Ralph J. Bunche, Karl E. Mundt, George Berthoin, Robert C. Weaver, Dean Acheson, Chester Bowles, Averill Harriman, Sargeant Shriver, Sidney G. Tickton, Edward Litchfield, President of University of Pittsburgh. This activity permitted students to discuss first-hand with distinguished leaders problems in foreign affairs, education, journalism, the Peace Corps, and other areas of national and international importance. The teachers and students also had one "live" telephone lecture with Dr. E. R. Jolliffe, of Michigan State University, the author of *Tales of Greek Drama.* He discussed how he happened to write the book, what he hoped it would achieve, and some of the great ideas of the classical drama in application to the problems of today.

Sixth, what in anticipation, and just on the surface, would have seemed the most deadly, dull, useless, and monotonous of activities were the activities growing out of a realization that the Mississippi students and teachers as a group, culturally deprived and disadvantaged and the product of generations of inadequate education, always stood below the norm on nationally competitive examinations for scholarship; and on examinations for all the emerging job opportunities in industry and government. Each student and teacher in Project Enrichment built up a collection of booklets: National Merit Scholarship, College Entrance Examinations, "SCAT," "SAT," "STEP," Civil Service Examination and similar tests, and then they began to examine test items or questions. Then amazingly, an item in a test became to them not just an item in a test; it became a doorway to an unlimited background of knowledge—facts and ideas, to which previous elementary and secondary schools should have exposed students.

The shock to teachers and students of the summer's contact with the nationally recognized competitive examinations and the Civil Service Examinations is summarized in these words of Horace Mann Bond:

> *You are way behind. The only way you can catch up is to sacrifice most of the usual recreations your companions indulge in. You need to go back, nearly to the first grade, to learn the facts, and acquire the study habits you missed on the way up. You need to learn how to read; and you will have to read both the textbooks and outside material in a quantity you have never imagined.*
>
> *You need to review ALL of your arithmetic; all of everything else.*
>
> *This means hard, toilsome, drudging work; not for a month, or six months, or a year or a year or two; but for years, and years, and years.*

Will reading, believing, and acting together on Saturdays for two years and during the summer for five weeks change the lives of students and teachers so that they ask new questions, look for new answers, and communicate the answers to others in Mississippi in a contagious enthusiastic dedication to the cause of true education which both teachers and students accept as a demanding responsibility? There are seldom any answers to big questions and this is a big question that calls for a look into the future of Mississippi and the South. The future of *Project Enrichment,* however, will show an emphasis on the objectives and activities of the past with any adaptations necessary for motivating superior and talented students to become real assets to the colleges and communities of both state and country.

HOW THE UNIVERSITY OF WISCONSIN helps, test & guide SUPERIOR HIGH SCHOOL STUDENTS

J. W. M. ROTHNEY*

An exciting experiment in the discovery and guidance of superior secondary school students on a state-wide basis that may develop procedures for use at a national level is now in its fourth year at the University of Wisconsin. Seventeen hundred students will participate in the activities of the two branches of its Research and Guidance Laboratory for Superior Students during the coming year. Thousands more will participate in future years while they are high school students or as graduates who have been counseled at the laboratory and are being followed into their post-high school careers.

Their parents are cooperating in planning for their current and future education, their teachers and members of the university faculty are working with them on their educational and vocational decisions, and 12 staff members of the laboratory are testing and counseling them. This cooperative effort is providing for the most comprehensive research-through-service project in the discovery and guidance of superior students that has ever been attempted.

The laboratory which began as a small cooperative pioneering project of the School of Education and the College of Engineering in February 1957 B.S. (Before Sputnik) is now an officially recognized part of the university. A committee composed of the deans of Letters and Science, Engineering, Education, Law, Medicine, Agriculture, and representatives of the Extension Division and the School of Commerce advises the director of the laboratory. The work on the Madison campus is done by a member of the School of Education and a staff of 12 graduate students in guidance. At the Wausau branch, which was opened in September 1960, a former staff member of the Madison Laboratory and two graduate assistants carry out the program.

The ninety-one cooperating high schools were those which responded to a note in the bulletin of the State Department of Public Instruction to the effect that the university would cooperate with schools in experimentation on the discovery and guidance of superior students. The number of schools which have asked to join in the experiment is at least as long as the list of participating schools, and it

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appears that it will be necessary to increase the number of laboratory branches. The current participating schools provide an excellent sample of the secondary schools of the state in terms of size and geographic distribution. In size the range is from schools with ten teachers to one with more than a hundred. This distribution is significant in view of the fact that most previous studies of superior students have been carried out in large cities or in large schools and the bright student in the small school has received scant attention. Students are brought to the Madison Laboratory from some communities more than 250 miles distant. The schools provide for all travel expenses of the students and staff members who accompany them.

At the time the laboratory was opened a crucial decision about the method of selecting students was required. It would have been possible to direct the schools to send only those ninth grade students whose test scores were above some arbitrarily selected figure. The definition of superiority by this method has been done so frequently in the past that the questions most frequently asked of this writer are about the percentile or IQ score that is used as a cut-off point in selection. Instead of using methods of selection which put too much emphasis on test scores the laboratory staff encourages the schools to employ their own selection procedures. The following suggestions are given to the schools in written form and they are discussed frequently in conferences and in school faculty meetings:

> Since superior students exhibit their superiority in many ways *no single test score can be used as the sole criterion on which they should be selected.* Teachers' judgments, evidence of a high level of performance in any of the academic fields, students' written performances, high grades, and evidence of high motivation coupled with high test scores can all be used in the identification of potentially superior students. (Following this statement there is a list of characteristics of superior students.)
>
> In some schools principals ask teachers to nominate their superior students. The principal then joins a committee of teachers to review the nominations, considers such other factors as those noted above, and makes a list of all students nominated. Frequently the list of most highly rated nominees, along with the reasons for their selection, are returned to the teachers for further consideration.

Selection procedures used by the schools have become more effective over the past four years. Average scores of ninth grade students sent to the laboratory are in the ninety-fifth to ninety-ninth percentile range on Form 1A of the School and College Ability Test. Their general performances in school, on other tests, and on written documents suggest that the schools are selecting students of high potential. Apparently, teachers can recognize superior students when they are given assistance in doing so. And there is evidence to suggest that the process results in greater awareness of the characteristics of the total school populations from which the laboratory subjects are selected. The discovery and guidance of superior students is an obligation of the schools which cannot be delegated to any other agency. The laboratory can take only a sample of the students in any school, demonstrate methods with them, and encourage schools to use and expand upon such methods. The size of the sample from each school depends on the population of ninth graders, but flexibility is permitted. If schools, after looking over their students, request an increase in the size of their quotas, and even in some cases reduction of them, they are permitted to do so.

The students come to the laboratory for the first time as ninth graders. They continue to come for a full day at least once each year until they graduate from high school. During their visits the students are tested and counseled. They write personal documents so that counselors can assess their writing skills and learn more about their background, problems, and plans. The total performance of the day is interpreted to the student and all information obtained is shared with him. They are permitted to attend university classes and to visit various studios and laboratories. When a student is beginning to express interest in a particular subject-field an interview is arranged for him with an authority in that field. "It was wonderful," said one tenth grade boy who had just had a conference with a world-famous authority on satellites, "to sit down with Professor ——— and compare notes on what *we* were doing." And students report that it is an enlightening experience to see a college class from the inside.

In some cases the students bring samples of their writing, art work, or other productions to the laboratory for assessment by experts. Professors provide constructive criticism and encouragement. All members of the university faculty who have been asked to confer with students, permit visits to their classes, and appraise their work, have responded with a good deal of enthusiasm.

After each student returns to his school a laboratory report is sent to the principal. It describes in two or three pages the student's performances, problems, and plans, and it ends with a number of suggestions to the school. Principals usually require each teacher who has the student in her class to read the reports and participate in sessions in which they are discussed.

Members of the laboratory staff visit the school for a full day shortly after the reports have been sent to the schools. At this time they meet with the parents of all the students. In most cases each father and mother has been seen separately to permit collection of research data, and then both parents have been brought together for a discussion of their child's performances, problems, and plans. Members of the laboratory staff also confer with the student's teachers and the day is completed with a faculty meeting at which each staff member presents a report on the student with whom he worked at the laboratory. Vigorous discussion of particular students and of general methods of identifying and guiding superior students usually follows.

The laboratory staff plans to follow these students for many years through post-high school education and into employment. Follow-up procedures have been developed and control groups of subjects have been selected. It is anticipated that some 250 new subjects will be added each year and that approximately the same number will be graduated. The wealth of longitudinal data will assure a large population for research purposes. It will also provide opportunities for graduate students to get supervised practice in counseling and research in guidance.

The many researches that have been completed and are now in progress are too numerous to report here, but a sampling of them may illustrate their nature. Two studies have revealed the extent to which conflicts may arise when mothers, fathers, teachers, and superior students themselves respond to inquiries about students' self-concepts and choices for the future. They suggest that superior students' progress may be influenced adversely simply because the often divergent opinions of these persons who are important to the students' development are not given enough consideration. Processes which superior students employ in thinking have been studied by an exercise in oral reasoning in which students are required to solve problems while tape recordings and observations are made. Students' written performances are analyzed in terms of their reactions to persons and situations and unusual departures from common patterns of response are receiving special attention. Patterns of activities (as contrasted with check-lists of interests) pursued over the four-year period of high school and beyond have been under constant scrutiny. The differences between activities selected by superior students and groups of average students in control groups have been studied. Patterns of reading performances of superior students suggest the need for stimulation of this activity. The forecasting efficiency of objectively-scored tests and their general utility in counseling is under scrutiny. No suitable paper and pencil tests for the study of creativity have been found or devised, but nontest evidence of originality is constantly being sought. The development of educational and vocational choices over a period of years is being studied and some interesting findings and hypotheses are beginning to appear. The educability of school personnel by participation in the laboratory is a subject of major interest and will continue to be a matter of concern to the staff. Current reports suggest that one can be optimistic about the outcomes. Follow-up procedures will enable the staff to determine the extent to which the laboratory procedures result in effective conservation and development of unusual potential of superior students from the ninth grade through college and beyond.

The studies noted above are just samples of the many which the comprehensive data obtained at the laboratory make possible. It will be observed that they permit both the hypothesis-testing and hypothesis-finding strategies of research. The writer participates actively in the interviewing, testing, conferring, and faculty discussion. Such experiences impress on him the complexity of the task of identifying and counseling superior students and the great lack of basic knowledge about these important matters. He is frequently impressed, too, with the need for better samples of the individual's behavior as well as better samples of the populations with which he works—a need which those who write much about educational research often seem to ignore.

Total financial support for the laboratory was provided by the university for its first three years, and a grant from the Office of Education supported part of the research in 1960-1962. In the past two years school fees have provided for approximately one-fifth of the cost. The essential financial support seems, at times, of less consequence than the encouragement and assistance by the hundreds of individuals who are involved. It seems that a task as important, as complex, and as challenging as the discovery and guidance of superior students requires joint action by many persons over a long period of time. Cooperative efforts by members of a university faculty, by high school personnel, by students, and by their parents appears to be essential if progress is to be made toward solution of the many problems that arise. Perhaps the "Wisconsin Idea" may be as useful in this area as it has been in many others. Perhaps it may be equally successful in the other 49 states.

GREAT BOOKS IN HIGH SCHOOL

the beginning of life-long honors

EDWARD L. HENRY*

The intriguing prospect of a continuum of honors education for exceptional students spanning almost the entire period of formal education from elementary school through college appears on the threshold of realization in the United States. Indeed, if one considers the adult Great Books program and others somewhat similar to it as oriented toward an intellectual elite then it can be said that the possibility is now present for exposure to more or less systematic honors work over an entire life span.

While various attempts have been made to challenge the superior student at the pre-college level in the past they have been somewhat sporadic and certainly discontinuous from grade to grade in any particular school system. Children have found it almost as difficult to break away from established procedures and exercises to which they have become habituated as the teachers to breaking tradition. Differences in philosophies of education within the staff as well as the complexities and costs of sectionalizing for ability have impeded potential benefits of curricular programs aimed at able students.

Now a rash of adoptions of a new, tested, extra-curricular honors program at the elementary and high school level suggests that the practical problems can be surmounted more easily and the way opened for reversing the perverted Deweyism that democratized the challenge out of education for so many for so long. For want of a better phrase we can call it "Junior Great Books" since this description helps connote the objectives and procedures that characterize its elder brother, the adult Great Books. The new honors program is a grade-school, high-school version of this forebear oriented to the particular problems of the pre-college educational system in the United States.

With the announcement by the Chicago Great Books Foundation that it will offer this fall a systematic program of this nature for grades five through nine complete with classics, a training program for moderators, and a manual for them, the sparks set by existing programs may well ignite into a prairie fire.

The initial flint was probably struck in the Catholic school system in Louisville, Kentucky, in 1957 when the diocese sponsored an experimental group. It aroused the interest of the Ford Foundation which provided funds for three succeeding years. At least two other parochial systems had adopted the idea by 1959—Kansas City, Missouri, and Saint Cloud, Minnesota. Now the entry of the Great Books Foundation, with its superb experience in adult education, provides additional impetus and an air of permanency.

The program briefly consists of classics carefully selected and, in some cases, edited, and arranged in order of difficulty for the juvenile mind according to grade level. The Louisville program for instance, runs from fifth through twelfth grades. An adult moderator, who is generally not a professional educator, conducts the groups of ten to 15 boys and girls in extra-curricular sessions after school hours. The usual nonauthoritative atmosphere prevailing in most honors programs prevails here. The student is taken outside the habitual context of formal classroom procedure and encouraged to discuss freely and critically. Works covered range from Aristotle, Aquinas, Dostoyevsky, Shakespeare, to Twain, Kipling and lighter pieces. The Chicago program promises to be somewhat heavier than those now extant.

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To the skeptics who are used to seeing youngsters flailing the air with comic books let it be said that the basic human problems which are the subject of the classics have equal magnetism when properly presented to precocious youngsters. The author was pleasantly shocked to find his seventh grader so absorbed in Plato's *Apology* not long ago that several dinner calls failed to distract her concentration. I am sure that a new world opened to her that evening. Two of our groups last spring insisted on doing more books than the program called for, one seventh grade group taking Golding's *The Flies* as an extra. One moderator was inviegled by his youthful charges into operating a group last summer through the vacation period.

The bright, exceptional child has been the most underprivileged child in the American system of education for many decades. This is a situation being partially and sporadically overcome at present, in some high schools. The situation in the grades, however, remains poor. If students in college and high school are different sized containers and therefore cannot all be filled with a single size education, the same is true, or, perhaps more true of the grades since the habits of a lifetime are more easily shaped here.

And it is appropriate that a group which has greater capacity ought properly to study with those tools that are most appropriate to the free man—the classics. The question for them is not only the amount of education they receive but also the kind. If liberal education has values then elementary education particularly, which of all levels of education is least vocationally oriented, has the finest of opportunities to use the best sources for liberal education, the classics. This program fulfills those requirements.

Empirical tests that can prove definitive results from the program have yet to be devised. Some graduate student undoubtedly is going to get his union card in a project of this nature. However, common sense plus observation have stamped a hearty seal of approval on results thus far. Moderators of the dozen groups operated in the City of Saint Cloud, Minnesota, have been almost unanimously enthusiastic about their groups.

The program has great adaptability to local conditions. In Saint Cloud it began in the sixth and seventh grades; it has gradually been extended to the eleventh. Original admission comes through IQ tests plus a reading ability two years beyond one's grade level. Discipline problems are not tolerated, but few have occurred. Once in, a student continues eligible for succeeding years. The difficulty of the selections to be read may be adjusted to the quality of the student in the groups as controlled by the admission standards. In large school systems they may be made more rigorous. The program, of course, is voluntary.

The approach is actually tailor-made for the parochial system which has some unique problems of its own. Overworked teachers are not burdened with an additional responsibility, and laypeople who conduct the program inject perhaps a balancing humanistic point of view. The child receives attention not always possible in large classes, and the program costs are practically nil for the school. The involvement of lay adults pays at least lip service to the Catholic teaching that parents have primary responsibility for the education of their children; and it certainly broadens the base of lay interest in and support of the system.

Much the same type of problems face the pre-college honors program that face the college honors program. Where do you shop for good moderators, the key factor in the picture? How do you get rid of poor ones? We started initially with housewives who had been exposed to the discussion methods through adult Great Books. Subsequently two neighboring colleges were tapped for upper division student moderators who worked out very well. Logistics presents a nagging problem—getting the books from varied publishers, and in time; procuring space for meetings; scrounging up replacements for ill moderators, etc.

For next year the Saint Cloud diocese has established a stipend and a budget for a central director. This fall an orientation session for moderators and another for parents will be held. Moral support at home is more necessary than for college-age students. We found that the program operates more smoothly in the grades than in high school, since the latter sponsors more competing activities. However, if the proper prestige is accorded the program it will stand on its own feet as in college. Since one deals with a more scattered clientele, publicity through local papers becomes more essential in stimulating student and parent interest in the project. Needless to say, school authorities must be sold first. Do not assume that projects of this nature will always be welcomed with open arms. Remember, someone once said that education is too important to be entrusted only to the educators. Not all educators understand this.

The Junior Great Books idea is really an extension of the college honors concept. While it is not the only type of honors program for the pre-college grades, because of its greater practicability it is possible that it rather than some of the extant methods may effect a revolutionizing influence on educational quality. Our experience has been that there are spillover effects in the family that help establish new attitudes and values there, while the discomfort of having a larger helping of critical students in conventional classes keeps teachers alert and may force introspection on existing teaching methods.

College honors moderators will welcome the end products of such a program, for college freshmen will have been initiated in advance into the habits of critical reading and listening and group dialogue. Presumably a real liberal arts education will have been begun long before the freshman year. A student beginning the program in the fifth grade and continuing through high school will have read more classics before college than most college seniors do in college.

With this in mind it seems natural that colleges and universities will hasten to support and even sponsor such a movement in their own localities. Too, college educators will want to launch empirical studies on the effects of honors programs begun while the student is still at a malleable age when habits and attitudes towards intellectual activity can be more easily shaped. Of course, colleges without honors programs may find it difficult to keep such mavericks satisfied. In such places the offspring of grade and high school honors programs may have to leave college, as Robert Frost did, to get an education. Colleges with honors programs of the Great Books variety may run into some apparent problems of repeating Junior Great Books work in their colloquia, although realistically the classics can tolerate repeated probing. I would hesitate to impose the nightmare of an honors program within an honors program on already harrassed honors moderators.

It is certainly too early to say that programs of this nature hold the answer to the problem of under-educated, vocationally oriented American school children. But I have seen enough reflections of hope in the eyes of enough people scattered about the country who have experimented to suggest that maybe the same potential is there that is being discovered in our college honors programs.

It is my impression that college honors enthusiasts had now better take a longer look ahead and start thinking in terms of honors articulation not only with secondary education but with primary education as well. The best way to assure this articulation and to prevent islands of disconnected honors programs run by balky or incompetent interests is to get in at the beginning and help formulate a feasible and cohesive grade-to-college plan.

Great Books Reading List Used for Last Two Years in High School in Louisville, Kentucky

JUNIOR READING LIST

1. *Book of Genesis,* Part I (from Old-Testament) (P: Paulist Press)
2. *Prologue to the Canterbury Tales* by Chaucer (P: Appleton Century Crofts; P: Pocket Books)
3. *Crime and Punishment* by Dostoyevsky (P: Bantam)
4. *Republic* of Plato (H: Books, Inc.; and P: *Pocket Books: Dialogues of Plato*)
5. *The Constitution and the Bill of Rights*—from anthology *A Documentary History of the United States* (P: Mentor)
6. *Macbeth* by Shakespeare (P: Folger Press, Pocket Books, Inc.)
7. *Paradise Lost* by Milton (P: Rinehart)
8. *Oedipus the King* by Sophocles from anthology *Three Greek Plays* (P: Premier)
9. *Wordsworth*—selections (P: Dell)

SENIOR READING LIST

1. *Confessions of St. Augustine* (P: Washington Square Press)
2. *The Inferno* by Dante (P: Appleton Century Crofts; P: New American Library)
3. *Encyclical on Marriage* by Pius XI (P: Paulist Press)
4. *Medea* by Euripides (P: New American Library)
5. *Treatise on Law* by St. Thomas Aquinas (P: Gateway)
6. *Death of Ivan Ilych* by Tolstoy (P: New American Library)
7. *Idea of a University* by Newman (P: Holt, Rinehart and Winston, Inc.)
8. *King Lear* by Shakespeare (P: Folger Press, Pocket Books, Inc.)
9. *Consolation of Philosophy* by Boethius (P: The Bobbs-Merrill Co., Inc.; P: Ungar Publ. Co.)

Programs for Superior Student in High School

The following descriptions of special programs—most of them for superior students in high school—should give our readers a grasp of the variety of ways in which educators have attempted to meet the needs of pre-college "honors" students. Some programs are the result of cooperation between the schools and nearby universities or colleges, but most of them are administered by the schools themselves. In many instances stimulus and guidance for these programs has come from state departments of education. The trend now is for state departments to have an individual on the staff, or in a few cases a division, responsible for this kind of activity. In some states, grants are made from the state department to school systems to help establish "pilot" programs or to turn going, model programs into workshops for interested educators from other school districts. Only a few schools have honors programs by ICSS standards. In fact, most of the examples described here consist of one or two courses held after school or on Saturday, but a number of school administrators indicated that they would welcome the help and guidance of nearby four year institutions in setting up true honors programs. Literally hundreds of schools and universities are cooperating in the CEEB's Advanced Placement program, and so the reader will find only a few descriptions of these below. We have included, however, descriptions of several programs designed to help "culturally deprived" children. There also are descriptions of a number of outstanding summer programs for superior high school students sponsored by universities and colleges. In most instances we have let the educator or administrator tell the story in his own words.

Arkansas

HONORS IS ADVANCED PLACEMENT

This program permits selected high school students from Fayetteville and the vicinity to take one or two college courses concurrently with their high school work. The students are selected by the Honors Council after giving the students a mathematics and college aptitude test, examining the students' high school records, interviewing the students, and receiving the recommendation of the student's high school. The program was inaugurated in 1960.

Students have entered the program from the following high schools: Bentonville, Fayetteville, Lincoln, Prairie Grove, Rogers, Springdale, the University, and West Fork.

Forty-three students entered the program from these high schools during the past three years. Of this number 37 completed at least one course for the entire year. Six who did not complete a year's work were from outside the city. They found the commuting too difficult. The combined grade-point average for the three years is 2.91, considerably above the 2.2 average of the university.

The major interest of the high school students has been in mathematics. Other courses taken have been English Composition, French, General Biology, Introduction to Art, Spanish, and Western Civilization.

Some of the work has been outstanding and, of course, some only of average quality. In the first semester of Calculus and Analytic Geometry this past spring, in a class of 29 college students and six high school students, there were three "A's" in the class. The top two grades were those of high school students, one from Springdale and one from Fayetteville. The four other high school students made "C's", but perhaps this grade was respectable enough since 14 college students failed in this class.

In addition to benefiting from more advanced work than that available in the high school and the credit earned, the high school students consistently say that one of the most important advantages of the program is the knowledge gained of what college work is like. The students feel that when they enter college as full-time students, they will do better for having had this experience.

California

California has a number of interesting programs in high schools for the gifted, and Paul D. Plowman, Consultant, Education of the Mentally Gifted, Bureau of Secondary Education, in the State Department of Education, sent us the following summary:

"Selecting from a number of excellent secondary programs, one can show enthusiasm for advanced senior seminars in the humanities in which gifted high school seniors wrestle with such ideas as: 'Any man's death diminishes me, because I am involved in all mankind' (John Donne) and 'If you would judge, understand' (Plato).

"Early college admission is possible for a number of students at Beverly Hills High School and a number of students from Los Angeles High Schools. In Santa Monica, school officials have teamed up with industry in developing computer mathematics courses for seventh and eighth graders. After a summer course, these students have programmed the LGP 30 IBM 1620 and the Data Control 160 Computers. Joseph E. Day, Principal of Lincoln Junior High School, is currently looking for a 'surplus' computer or gift for permanent installation.

"San Diego as well as Santa Monica has achieved a nationwide reputation. Here the special study centers, the classes for highly gifted students, and the Community Resources Council contribute greatly to developing to a maximum degree the potentialities of gifted students.

"Advanced placement programs in Palo Alto and in a number of other districts aided college-bound students, particularly those classified as gifted. Much of this material will be included in a forthcoming publication by the State Department of Education."

Plowman also sent along copies of two reports which are available upon request. One, entitled A Demonstration Center with Differential Programming for Gifted Pupils in California in Grades One through Nine, *describes a plan supported by USOE which will establish demonstration centers in three Northern California districts and three Southern California districts. On-going, successful programs in grades one through nine will be used over a three-year period to demonstrate, teach, and consult with teachers and administrators from other districts.*

The other report, A Progress Report of Programs for Mentally Gifted Minors in California Schools, *summarizes the various kinds of programs for the gifted being offered in the state's public schools, from kindergarten through high school, the number participating in these programs, and their cost. Both reports can be obtained by writing the California State Department of Education, 721 Capitol Mall, Sacramento, California, 95814.*

NEW HIGH SCHOOL PHYSICS COURSE

Three Harvard University professors are developing a new introductory physics course for San Mateo High School (California). The three are Gerald Holton, who described a connective physics course in the September-October, 1963, *Superior Stu-*

dent, Fletcher Watson, and F. James Rutherford.

In a letter Professor Rutherford said the introductory course was not being designed specifically for the superior student but "nevertheless should be suitable for him. Our purpose is to design a course which will make sense for a very large spectrum of students. In fact, we believe we can come up with a course which will be interesting to and make educational sense for essentially all students who plan to go to college and even for some who do not.

"The thing which we hope will distinguish our course is not the level of difficulty so much as the point of view behind it and the kinds of materials included. First and foremost, we expect our course to be a respectable course in physics. But beyond that, we wish to make it clear—by more than a statement or two in the preface or introductory chapter—that science is in fact a human enterprise enmeshed in a cultural matrix. It is easy enough to say that physical ideas develop from the work of human beings and that these ideas interact with society; it is easy enough to say that in any number of elaborate and even eloquent ways—but it is difficult to bring the student to a thorough understanding of science in such a wide context.

"We hope to use the history and philosophy of science as a pedagogical and an intellectual device. Pedagogical in the sense of raising the interest of many students in physics who are otherwise unenthusiastic about science; intellectual in the sense that a full understanding of a physical concept—say universal gravitation—can only come through an explicit exploration of the roots and evolution of the concept. Thus, our course will have a great deal more of the history, sociology, and philosophy of science than one usually encounters in introductory texts.

"By the same token, it is commonplace to say that the sciences are not neatly divided into compartments, but are closely related. If a student is ever going to believe this—given the fact that he studies his sciences one at a time—it will only be because he experiences this interaction for himself. Thus, the course we are developing takes up topics that involve astronomy, chemistry, and biology."

Professor Rutherford reports that he and his colleagues still are in the process of preparing the first rough draft of the course and have not made much progress in developing the laboratory guide or teacher's handbook. It is hoped that the materials and the course will be ready for their first test during the 1964-65 school year.

HONORS FROM FOURTH GRADE ON

After several years of study, the San Diego City Schools began their experimental program for gifted children in 1953. Annual revisions were made and the program was approved by the Board of Education as a permanent part of the curriculum in June 1958.

In the San Diego program, a student is identified as "gifted" when he achieves at least a score of 140 on an individually administered Stanford-Binet intelligence test and meets other criteria. Three experimental programs for "first order gifted" children are in progress which require a minimum intelligence quotient of 160 and other criteria. Two of these classes are at the elementary level (grades 4-5-6), and one is at the junior high school level.

Experienced and able teachers are appointed as consultants to the gifted program. Their function is to suggest materials and ideas so that teachers of the classes for the gifted at the elementary level are helped in providing enrichment for the identified gifted and other pupils of superior ability. In the elementary schools at the present time there are two such consultants. For the first few years of the program the consultants worked in all the elementary schools, but in the fall of 1958, as part of the general reorganization at the elementary level, certain elementary schools were designated as centers for the gifted, and parents of gifted pupils in the fourth, fifth, and sixth grades were invited to enroll their children in one of these schools. There are 16 such centers at this time. This system provides for better utilization of consultant time and of materials purchased for use in the gifted program.

The coordinator for the elementary gifted program works directly with principals, teachers, personnel of the Exceptional Child Services Department, the Guidance Services Department, the Curriculum Services Division, and the Research Department in planning the general instructional program for gifted elementary school children.

In the fall of 1957 a new phase of the program was introduced at the secondary level. The four teacher consultants, whose duties were similar to those of the elementary consultants, were replaced with people designated as "gifted program advisors." (This title has since been changed to "intergrade advisors.") There is now one such advisor in each of the 16 junior and 13 senior high schools, and each has at least one period per day for doing within the school the type of work previously done by the teacher consultants. The intergrade advisors meet regularly with the coordinator of the secondary gifted program for inservice workshops. The intergrade advisor helps gifted students with curricular choices and with planning for college entrance. The coordinator serves as a resource consultant to principals, providing reports on research and other significant data. He also meets with personnel of other administrative divisions concerned with planning curricular or operational improvements for all programs for the very able and gifted.

Gifted students in secondary schools are placed in advanced courses which lead at the twelfth grade to honors courses. When a student is successful in passing advanced placement tests, college credits may frequently be earned.

Personnel at San Diego State College assisted in designing some of the honors courses now offered in the city high schools. *—Martin J. Dean, Director of Services for Exceptional Children.*

THE "MORE CAPABLE LEARNER"

The identification and development of gifted students is an important objective of the Lynwood Unified School District's planning. The "More Capable Learner" and the "Mentally Gifted Minor" programs are our attempts to provide experiences comprehensive enough for individuals with different levels of ability, and basic enough to meet their educational needs.

The academically gifted boys and girls can complete the requirements of the regular course of study as well as extend their skills and knowledge, and develop the ability to think creatively and critically.

The programs not only continue the development of the basic skills and knowledge contained in the regular course of study, but through specifically designed instructional plans, these students have earlier opportunities to develop and apply basic skills, and are able to advance their knowledge in selected areas without grade-level restrictions.

At the elementary level, cluster grouping is the usual plan on the basis of general and/or special abilities, interests, and specific talents. The action research, which some of the principals did, shows that excellent progress can be made in the basic subjects with this plan.

After-school classes were held for 58 students at the fourth, fifth, and sixth grades. We tried to place them in an environment in which individual progress was the main purpose. Their first experience was a short course in Entomology, followed by one on Mathematical Concepts which dealt with symbols, factors, exponential notation of products and quotients, unknowns, sets, ratios, and the use of the slide rule. The year's work was completed with an English Literature course aimed at developing an appreciation of the beauty of expression, learning to respond with greater sensitivity to the finer shades of meaning in literature, reacting spontaneously to the warmth and feeling of the printed page, and encouraging creativity in personal expression.

The Mentally Gifted Minor students at junior high school, working individually and in groups, researched such subjects as: immigration, quarantine, tariff, world trade, and the European Common Market. A representative of the British Consulate spoke to the group on world trade and the future of the Common Market.

Information researched by the Mentally Gifted Minors was shared with their classmates, thereby deepening and broadening their own learning as well as that of the larger group.

Accelerated introduction of content, adjustment of programs, and boys and girls working up to their capacity at the elementary and junior high schools permits completion of some basic courses in a shorter time at the high school. Students who are identified as Mentally Gifted Minors, as well as More Capable Learners, take accelerated college preparatory courses in math and science, and enrichment courses in English and social studies. During the school year 1962-63, some of the accelerated subjects taken by students were:

41 students took Algebra I and II in one year ninth grade;
29 students took Plane and Solid Geometry in one year at tenth grade;
29 students took Algebra II and Trigonometry in one year at eleventh grade;
31 students took Algebra I, Geometry and Algebra II in two years instead of three;
28 students took Spanish II at ninth grade level instead of the regular Spanish I. (For the school year 1963-64, this number will be doubled.);
65 students took Biology I instead of General Science at ninth grade;
6 students completed five semester hours of calculus;
3 students completed ten semester hours of calculus at Compton Junior College (twelfth graders);
3 students completed three semester hours in Psychology at Compton Junior College.

Enrichment of the educational program consists of educational opportunities which extend or replace those offered in regular classes, or permits a pupil to apply the subject matter he learns to experimentation, or which helps him to utilize his knowledge in formulating generalizations above the grade level. This approach to enrichment automatically eliminates repetitious materials. It means a learning experience that will enable the pupil to reach any height in a given subject field to which his interests impel him and his abilities permit.—*Hyrum W. Loutensack, Superintendent of Schools, Lynwood, California.*

READING AND GIFTED PROGRAM

San Juan Unified School District, situated north of Sacramento, is fortunate to be located near two junior colleges, American River Junior College and Sacramento City College, and two four-year institutions, Sacramento State College and the University of California at Davis. Although most of the students who apply for honors courses attend the two-year institutions, approximately one-third of the students attend Sacramento State College, and one to three students attend University of California at Davis.

The honors program has been in effect in San Juan Unified School District three years and has grown from three students attending college during the first year to between twelve and eighteen students attending at present. Each year more students enter the program.

The University of California at Davis and Sacramento State College both require that students be seniors in high school, and that they not only fulfill all college entrance requirements but go through regular matriculation procedures. Judgment as to where the student is placed is based on test scores, grades, and special aptitudes. This is usually no problem, as the students involved are "certified" gifted—that is, by state definition, 130 IQ and above.

The University of California Davis campus assigns the student to an academic dean who acts as an advisor and counsels with a student before he enrolls in a program. At Sacramento State College the student may elect to see the dean of admissions, but there is no academic advisor assigned to the student.

The colleges have been most cooperative in helping to place students. The main problems involve transportation and hours which may not always be convenient or possible, particularly in the field of science, which may involve two-hour lab sessions.

Counseling on the college level and a follow-through on the student's program are of great benefit to the student.

San Juan Unified School District has found the honors program of benefit to the student who is mature and serious about his school experience. College courses in almost all categories have been taken by the students—mathematics, science, history, anthropology, sociology, psychology, and foreign language. Foreign language is the most popular course offered at the present time. There have been no students taking art courses as yet, but the arts may be pursued when the demand for such courses at the college level is felt. To date, no students have failed the college courses, and grades have averaged a strong college "B."

Since a number of our students benefit from challenging courses of study, the college honors program has fulfilled this need for high school seniors who have completed the necessary high school credits, and passed the tests which may help to indicate abilities in certain courses. It is hoped the program will grow until every capable high school student who can benefit from college courses will take advantage of the program. *—Marion Faustman, Coordinator, Reading and Gifted Programs*

Colorado

ABILITY GROUPING IN 7th GRADE

School District # 11, in Colorado Springs, has for many years provided for individual differences by means of ability grouping in academic subjects, starting in the seventh grade. The groups are designated as follows: 1, C; 2, B; 3, A. Pupils taking enriched courses are placed in group C; standard courses in B; work not covered in standard course in A. The same type of grouping is done in senior high school.

To further differentiate and individualize instruction and curriculum to provide for individual needs, several programs have been established in recent years.

In the high schools, pupils with scores at the 95th percentile or above on SCAT and STEP tests are eligible for honors classes. Honors classes are available in English, history, science, and mathematics. Students in these classes must be recommended by their teachers and have high grade achievements in prerequisite courses. Subject matter in these courses is even more highly enriched than in regular "C" classes mentioned above.

Several considerations are made in placing pupils in regular tracks or special programs. These include teacher recommendations, all test data including mental tests, conflicting activities, disciplinary problems, emotional and social needs, etc. No group need remain static. Pupils are changed as needs are indicated. Composition of groups is studied regularly by principals, counselors, and other interested persons.

An accelerated mathematics sequence is available for qualified students in all junior high schools. Youngsters who have had some accelerated experiences in their elementary program and who meet a criteria of 97th percentile on SCAT, and 94th percentile on STEP math, and who are recommended by their elementary teacher, are eligible on a voluntary basis to begin the math sequence in grade seven. The concepts of seventh and eighth grade arithmetic are combined into a year program. Approximately 300 students are beginning the seventh grade sequence this year. Algebra I is offered in grade 8 and algebra II in grade 9, plane and solid geometry in grade 10, and math analysis with "trig" in grade 11. If the sequence is followed, it is assumed that an Advanced Placement course in calculus will be offered in grade 12. This program was started in September 1959, and the students selected are now in the eleventh grade.

Biology is offered in ninth grade in our schools for able and interested science students. The concept underlying this is to offer an enriched and accelerated science program so that able students will qualify for an Advanced Placement science class in grade 12.

Avanced Placement classes in English and American history are functioning successfully in both our high schools. Chemistry Advanced Placement is offered in one of our schools and will be offered in the other school in the near future. Advanced Placement mathematics (calculus) will also be offered in the near future as the pupils in the math sequence feeding into the program reach the level.

Our Advanced Placement program last year involved approximately 55 students. This year there are 85 in the program. A large percentage of these people received grades of 3, 4, or 5 on the tests in the spring and have received college credit or standing subsequently, depending upon the institution of higher learning they chose to attend.

Two students in Spanish were carefully and individually prepared last year by their teacher. They took the Advanced Placement test in the spring and did well.

Advanced speech for qualified students is another offering in the Colorado Springs schools. This is an enrichment program which has had favorable acceptance by students. College-level materials and experiences are provided in this program.

Music theory for exceptionally able music students is a part of our high school offering.

A special program for the highly academically talented youngster is going well. These youngsters are carefully selected at the end of the fourth grade and are placed in a highly enriched program. Pupils with IQ's ranging from 140 on up meet in special classes and remain together from grade 5 through grade 9. After this time they may go into high school honors programs and follow other special curricular offerings and individual interests. At present the first group which started in grade 5 is in the sophomore year in high school. They have progressed admirably through their enriched and accelerated experiences.

Pupils in the highly academically talented classes come from all over town. We are experimenting with adding to these classes at the beginning of the seventh grade. By careful selection of pupils who have recently come to our area, or who have developed sufficiently to become eligible, we are attempting to find out if new students can successfully be mixed with students who have followed the special program in grades 5 and 6. So far the outlook seems favorable.

Our entire program is kept pliable in order to maintain a flexibility of approach. Since we have an unusually able school population we try to individualize our curriculum, instruction, and grouping practices as much as possible.

Our special programs do not emphasize a mere adding to students' work load. Instead, the programs offer different experiences. Groups are studied closely, and each year programs change to meet particular needs of students in groups. Varied texts are used in many of the classes, and a depth, conceptual approach is emphasized.

As much individual programming as possible is done. It is recognized that some pupils may be high achievers in reading, for example, but low in arithmetic and vice versa.

It is felt that these separate programs not only have provided for the able and ambitious, but have resulted in a fuller recognition of providing for the needs of all students. The benefits of working with college faculty to plan for Advanced Placement classes and working closely with each other in our own school system to plan the many other programs has been of great value to all our staff.

The selection of teachers for enriched courses is a cooperative process involving the building principal, chairmen of departments, and the Division of Secondary Education personnel. Final responsibility for assignments, however, rests with the principals.—*William Liddle, Assistant Director, Division of Secondary Education.*

HONORS IN FIVE AREAS

Cherry Creek School District, in Arapahoe County near Denver, has honors programs for high school students in five areas.

Russell C. Polton, Assistant Superintendent for Curriculum and Instruction, sent along the following notes on each of these areas:

Mathematical Analysis

A seminar course in mathematical analysis has been established in Cherry Creek High School so that students of outstanding mathematical ability may have an opportunity to study beyond the high school level. About fifteen seniors are chosen for each section. Requirements are two years of algebra, one of geometry—which is integrated plane and solid—with an average of 86 or above required in mathematics. Two teacher recommendations also are required. Students chosen are those who have curiosity and interest in the field, perceptiveness, independence of judgment, as well as originality.

Two projects are required, one each semester. Topics for these projects are new to the student and of interest to him. A paper is presented to the class and members are allowed to question and discuss. Students are encouraged to read in the field of mathematics. The course includes college algebra, analytic geometry, introduction to calculus, and related modern topics. Subjects covered are determined by the interests of the members of the class. The student is given a chance to explore the field of mathematics on his own. This prepares him for college work in a way which cannot be done in the average high school class where certain requirements must be completed within a time limit.

Students from this course enter college and by placement tests are allowed to omit certain required mathematics courses.

Science Seminar

Interested senior students are carefully screened on the basis of high school science preparation and the ratings of previous science, mathematics, and English teachers regarding such qualities as initiative, responsibility, and honesty.

Each student selects an appropriate field of research and carries out library investigation, structures in experimental situation, then carries out a series of determinations and reaches a conclusion.

All work is recorded in a day-to-day notebook, and a final paper is written.

Theoretical Chemistry, Applied Chemistry

Students who elect chemistry are counseled that two courses are available.

Theoretical Chemistry is for those who intend to go on in science at college level or wish to become specialized in a science-allied field. The course involves investigation into the WHY of chemical phenomena and requires good reading and numerical comprehension.

Applied Chemistry is an informational-descriptive type course. It does not go too deeply into the WHY or into mathematical concepts.

Humanities

Through intensive and extensive reading in anthropology, mythology, philosophy, religion, psychology and sociology, and the arts, and through informed discussions of issues arising from their reading, selected seniors each year are encouraged to develop a degree of objectivity about themselves and their culture, to enjoy working with ideas for their own sake, and to recognize the influence of the humanistic tradition. In its sixth year of operation, this humanities course requires frequent analytical and critical papers and attempts at artistic production, as well as reading and discussion.

Senior English

Senior English courses for better students are enriched by use of class sets of 21 paperbound English classics, from *Beowulf* to *Man and Superman*, which parallel literary periods in a standard anthology. Each classic receives in-depth analysis.

MATH, COMPUTERS, INDEPENDENT STUDY

Jefferson County, Colorado, School District R-1 has these district-wide programs for students who are qualified: Math-Science Seminar; classes in the use of the computer, including actual experience; and an independent study program.

The second year of Math-Science Seminars for capable students is in progress with 26 juniors and seniors from the nine high schools taking part. On Tuesday evenings the students meet at Alameda High School to hear mathematicians and scientists present the latest information from research frontiers. The seminar is not taken for credit, but appropriate notation is made in the student's permanent record.

A seven-member advisory board of Jefferson County mathematicians and scientists helps the district develop the extracurricular program. Mr. Harold Lo Sasso, biology teacher at Alameda High School, is coordinator of the program for the district.

All juniors and seniors in the district are invited to apply for the seminar, and teachers are asked to submit recommendations for the students who do apply. The applications then are screened by a committee composed of area chairmen in mathematics, physics and biology, and supervisors of mathematics and science. Those recommended are submitted to the advisory board for its consideration, and this board makes the final selections.

Using a G-15 computer lent by the Control Data Corporation, high school students are learning the fundamentals of computer operation. The program is open to all junior and senior students who travel to Jefferson High School one or two evenings a week to take the class with teachers from the district. Students and teachers then set up computer classes in their own schools with the students trained to assist other students in the use of the computer. Students have been encouraged to take extracurricular classes in computer operation offered by the Control Data Corporation and the University of Colorado Denver Extension Center.

The high schools offer an independent study program in which students may spend from one hour to an entire morning or afternoon each day working on individual projects. They may use the school resources or seek information in the community or from nearby universities.

Each of these students has major responsibility for developing his own program of study and may engage in one or more projects until they are completed and then take on another project. He has a teacher-guide for help with a particular project and may have more than one guide depending upon his interests.

Projects are almost as varied as the personalities of the students involved. They study aspects of psychology, philosophy, art, science, and social studies which cannot be considered in the typical classroom situation.

It was concluded from a pilot program with 42 students in the 1962-63 school year that the students achieved as well in those skills which can be measured by means of a standardized achievement test such as the ITED as do students of comparable ability enrolled for a full schedule of classes. Students engaged in independent study show significantly greater gains in the use of sources as measured by the ITED than do students of comparable ability on regular schedules.—*Roy Van Dyke, Office of the Superintendent, Jefferson County Public Schools*

Florida

CALCULUS AND SCIENTIFIC RESEARCH

The Dade County Public Schools have contemplated offering a course in college-level calculus for several years. When an accelerated program in mathematics was initiated, students began their study of algebra in grade 8 and thus completed the usual secondary school offerings in mathematics at the end of grade 11. The eleventh grade course included a thorough treatment of trigonometry and analytic geometry. Accelerated students were offered a course in mathematical analysis based on *Principles of Mathematics* by Allendoerfer and Oakley.[1] It was felt that some of these students were capable of studying a college-level course, the Calculus.

The Supervisor of Mathematics discussed the advisability of offering calculus to high school students with Dr. Herman Meyer, of the Mathematics Department of the University of Miami. The discussion brought out two points. Few secondary school teachers were ready to teach a college-level calculus course, despite the fact they had pursued calculus courses in preparation for teaching. There was also a question of the ability and maturity of high school seniors to study college-level calculus. As a result of this conference between Dr. Meyer and the mathematics supervisor, a joint proposal was sent to the National Science Foundation for a cooperative program between the University of Miami and the Dade County Public Schools. The purpose of the proposed program was to serve as a refresher course in calculus for five carefully selected teachers and a begining course in college-level calculus for about thirty qualified high school students.

Classes were held for three hours one evening a week and on Saturday morning for both the students and the teachers. The students were dismissed near the end of this time and the teachers continued on with Dr. Meyer during the last half hour of each session. Dr. Meyer then reviewed methods and content of the calculus course with the teachers. Consequently, five teachers were able to offer, with some degree of confidence, a calculus course to selected students in their high schools this year. The fact that 24 students successfully completed the course and were comparable in achievement to university students in an honors calculus course seems to indicate that carefully selected high school seniors can master the elementary calculus. This year eight additional teachers and 20 high school seniors are participating in a similar program.

The success of the program is due in a large measure to the cooperation of the university and to Dr. Meyer's interest in and ability to work with young people and his appreciation of the problems encountered by secondary school teachers.—*Mrs. A. Y. Rickey, Supervisor of Secondary Mathematics, Dade County Public Schools, Miami, Fla.*

■ The Dade County Public Schools also have designed a program for superior science-minded students in the junior and senior years of high school. A report, authored by Harriet M. Ehrhard, describes the program. In it Miss Ehrhard says that "carefully selected students arrange their school schedules so they can report to research laboratories in the county where they study and do basic research under the direct supervision of well-known research scientists. The students spend at least six hours a week in the laboratories; they write scientific reports; and they maintain high levels of academic achievement. For their efforts in the laboratory they earn one unit of high school credit. Special library cards are issued to the students granting them the privilege of using all the libraries of the University of Miami.

"Each of Dade County's 17 senior high schools may recommend six students for the program. . . . All students must have completed at least one year of laboratory science, usually biology, and two years of high school mathematics. All must have high scholastic averages. . . . As part of the application for the program, students are asked to write an autobiographical sketch in their own handwriting. In this the student must express his interests, accomplishments, and aims, particularly those related to the field of science. . . ."

Georgia

PILOT PROJECT IN FULTON COUNTY

In the spring of 1961 the Fulton County Schools submitted to the Georgia State Department of Education a project for academically talented high school students and applied for a grant to implement it. The grant received was one of ten given over the state for pilot projects in this area.

The Fulton County project was sponsored jointly by the Language Arts and the Social Studies Departments. In the first year of its operation three schools were selected, within each classes were formed for enriched work in world history and English at the tenth and twelfth grade levels. These courses were supplemented by the addition of special reading and film materials, and discussion at a level to challenge these talented youngsters. In addition, since talented students often carry ambitious reading programs in both high school and college, a noncredit course in efficient reading was offered to these students under the sponsorship of the English department. This course was made available before school twice a week during first semester for the seniors and in the second semester for the tenth graders. Although it was hoped that a reasonable gain in rate would be an outcome, the primary objective was not speed, but a high level of efficiency in reading according to the nature of the material.

The first steps in this project involved interpretation of the plans to counseling and administrative personnel in the schools through meetings and conferences and the selection of staff members to assume the special responsibilities involved. An invitational, in-service course in reading was offered to representatives from all schools to prepare for the immediate offerings and for later extension of the program. This was followed by discussion meetings in the humanities planned by each of the departments for its own members and directed toward areas of special interest for the project. Visiting consultants with special competence in these areas were invited as leaders to participate in these meetings.

The project was considered very successful in its first year, and a continuation of the grant made it possible to extend it to other selected schools in the second year. In this, the third year of the project, extension has been made to other grade levels. Both the English and the social studies "Humanities" sections now include a group at each of the levels 10-11-12.

With the larger number of students now involved, the reading improvement course cannot be offered to all simultaneously, since scheduling makes it necessary to keep it at the early morning hour. It has proved practical to give the priority to the more advanced grade levels, since the younger students will have a later opportunity.

Experience has indicated that the present pattern is a very good one, and future plans are being made within this framework. Further enrichment in depth will be sought through continuing study and selection of desirable materials. Use of programmed materials with the younger students in the area of language skills is being tried to effect a saving of time for more creative work in language. This offers also the advantage of independent work, which generally appeals to these capable students. This work for the academically talented is still considered a pilot project and is limited for purposes of study and evaluation. It is hoped that it may soon become established as a regular program in all schools of the system according to the particular needs of their students. *—Mrs. Miriam T. Felder, Consultant in Language Arts, Fulton County Board of Education.*

Illinois

ETHS DEMONSTRATION CENTER

Under the terms of a state grant, Evanston Township High School is participating in the Illinois Program for Gifted Children through the establishment of a demonstration center for the education of gifted students. With the establishment of the center, a three-fold program involving demonstration, research, and conferences is in effect for the remainder of this school year and throughout 1964-65.

Visitors to the ETHS Demonstration Center will be welcomed to view, on a pre-arranged schedule, individually adjusted and designed to meet the interests and needs of the visitor, the program of education of gifted students which has been carried on for many years and expanded extensively during the past decade. The program includes honors classes, team-teaching situations, advanced placement or college-level classes, seminars, and areas of special interest. Visitors may observe these classes in regular daily operation. Opportunities will be provided also for the visitors to confer with teachers and other school personnel concerning both the program for the gifted and criteria for selection of these students.

Included in the program for the gifted at ETHS are the academically talented students, comprising approximately the upper twenty-three per cent of the school's enrollment. The majority of these are found in honors classes, with the advanced placement or college-level courses and seminars including nearly 200 indivduals who are each taking one, two, or three of the eleven such courses offered.

In the academic areas there is a sequential pattern at ETHS through which students of superior ability, as indicated by scores on academic aptitude and standardized achievement tests, marks earned in course work, and teacher and counselor recommendation, are assigned as freshmen and sophomores to honors classes. They proceed through these to advanced placement courses in the junior and senior years. It is a policy of the school that a student is assigned to an honors class if his abilities so warrant. Enrollment in advanced placement is by invitation, however, and is accomplished only after conferences in which students and their parents learn about the courses and the responsibilities which enrollment entails. Advanced placement courses are offered in English, United States history, European history, mathematics, biology, French, Spanish, Latin, and German. There is also a unique two-year sequence in advanced placement physics and chemistry.

Many of the advanced placement or college-level courses are conducted as seminars. Outstanding among these is the math-science seminar carried on in a specially equipped laboratory in which major experiments can be performed. Students also meet in small groups for discussion of individual projects and attacks on science problems in an atmosphere which breaks down the discipline barriers of the separate sciences. Also noteworthy is the senior English class which has its own seminar room with a self-contained library. Here students lead the frequent discussion sessions with the teacher serving as a resource person.

In areas other than academic, gifted students are afforded opportunities for the fullest development of their abilities. In art, business education, home economics, industrial arts, music, physical education, and speech arts, talented students work on individual projects or as assistant instructors. Summer programs for the talented include a theatre-music workshop which presents annually a summer musical production of professional caliber, and an Institute for Far Eastern Studies which includes Japanese and Chinese languages.

A major feature of the ETHS Demonstration Center is a conference once each semester which combines a day of visitation with orientation and discussion sessions. Present plans call for one conference on the theme, "The Honors Program as a Basis for Advanced Placement," one concerned with the identification and selection of gifted students, and one dealing with unique problems related to the different subject matter areas.

Concurrent with the demonstration of the ETHS program will be deepened research in the area of the education of gifted students. Coordination of teacher activities with study and experimentation being carried on in cooperation with neighboring universities will help significantly in the evaluation of the program as it relates to the selection and training of gifted students. Follow-up studies will be carried on to implement further the techniques and procedures developed.

It is believed that the ETHS Demonstration Center will advance the education of gifted students by making it possible for other administrators and teachers to observe what is being done, thereby enabling them to initiate or advance their own programs. The conferences are designed to stimulate further such activity. The research being carried on, it is hoped, will heighten the effectiveness of present programs and indicate possible new directions.—*Frances R. Duffie, Administrative Assistant, Demonstra-*

tion Center for the Education of Gifted Students, Evanston Township High School.

Indiana

SUMMER SESSION ABROAD IN LANGUAGES

Indiana University offers superior high school students a ten-week summer session abroad in foreign language training for French, German, or Spanish. All students selected must have been studying the foreign language concerned for at least three years before applying.

The university considers this an honors program for high school students with the goal of bringing each student to a point of reasonable fluency in the use of his foreign language.

David C. Munford, director of the program at the university, wrote that Indiana's program differed from other overseas study programs in the following three respects:

"1. Its working objective of practical mastery by each participating student of the foreign language is *primary;* all other purposes usually associated with overseas study are secondary.

"2. While conducted by a university, this program is exclusively for secondary schools.

"3. Its longer term purpose is to help these secondary schools expand and improve their teaching of modern foreign languages.

"In order to participate in this program," wrote Munford, "a school must be teaching one of the three foreign languages concerned in four-year sequences with the third and fourth year separately scheduled and separately taught (during our first two years of operation only 31 such schools have been included in the pilot group, but we hope to include all such schools in the state next year). From such schools any student can apply who is not beyond the eleventh grade and who has been studying his foreign language for at least three consecutive years. In selecting we test all applicants for their oral proficiency, using the new Modern Language Association Proficiency Tests for Advanced Students. We also consider all other standard criteria for rigorous selection of overseas students, including qualities of citizenship and character.

"Up to 30 students in each language can be chosen. Financial need bars no one from participation, once he has been selected as an honors student. All honors students who need help can receive financial grants-in-aid; we use the College Scholarship Service of the CEEB for this purpose. This has the effect of pricing the program differentially to all but at a level which each student can afford to pay if he feels the values to be derived from participation in the program are worth it to him. Maximum prices, all-inclusive, are $950 for French or German, and $650 for Spanish. The minimum price is $100 for every language; thus all pay something.

"In France and Germany, nine weeks are spent in a single study town. Each student lives with a native family throughout the summer. A special summer school established and conducted by Indiana University with assistance from local natives gives five hours of instruction daily in the spoken language. The teacher-in-charge is an American high school teacher of the foreign language recruited by Indiana University on a nation-wide basis. There is a strict no-English pledge in operation throughout the summer. No one connected with the program speaks English for any purpose at any time from the first until the last hour. This actually happens, and is a critically important factor in the teaching-learning process.

"In Mexico, because of special problems we are using the regular summer session of the Instituto Tecnologico de Monterrey instead of our own teaching system based upon homestays. The Instituto Tecnologico offers a six-weeks session taught exclusively in Spanish with dormitory-style accommodations. Outside the classroom, the prevailing language in use at the Instituto during the summer is English, however, and this has its effects. Still, the results we achieve there are significant.

"Our Spanish students return home much

advantaged linguistically and personally, it would appear. Our French and German students return home entirely capable of using their foreign language freely in all life situations abroad. The facility some achieve has to be heard to be believed. A few approach near native comand at their age level and, in fact, during both our first years we have had the experience of seeing some of our honors students mistaken by natives for native while overseas. We are submitting all these results to testing on a before-and-after basis, and the score results now being delivered by the Educational Testing Service seem to bear out these personal observations.

"The program was established in the 1961-62 academic year after a year of previous research and planning. Its first summer overseas was in 1962 and its second in 1963. One hundred and thirty-eight students have been served in all three languages in these two years. All returned to their high schools to spend their final year there. All were pledged to continue their study of the language during that year in order to be able to act as motivators and models in the classroom. It is this impact upon the classroom situation in the Indiana high school which is our ultimate purpose.

"We are assisted by a grant from the Carnegie Corporation; we also received a smaller subsidy from the U.S. Office of Education during our first year. We hope to be able to replace these subsidies with local grants this year and next."

Professor Mumford concluded by offering his personal evaluation of the effectiveness of the program as well as some of the problems encountered:

"We have shown that when the effort to exploit overseas residence for language learning is complete and professional, the results can be several times those achieved by independent study abroad or in overseas programs in which language learning is a subsidiary purpose. We have also shown that the age group thoroughly vindicates those of us who relied upon them to respond positively to an adult challenge of this sort. Of course, *extreme* care must be taken in selection. for the kind of responsibility we have to assume for the teenage children of other parents is great.

"What happened was that almost all the children in our first year, and absolutely all of them in our second, met our challenge like the men and women they are becoming, instead of like the children they have been. They have come home in triumph and eager for new challenges. Many turn out to be dissatisfied with some of the trivia of high school life which hitherto had escaped them. A tremendous number are evidently determined to become language majors in college with a view to teaching languages. This is also one of our objectives, and we are delighted.

"The problems of running such a program in four countries at once are great, and it is not yet clear that we will be able to solve them all satisfactorily. However, we will continue to try."

FOUNDATIONS FOR COLLEGE

Foundations for College (FFC), Indiana University's 8-week Summer Program for Talented Students, has just completed its fifth year. FFC is designed to help college-bound talented students accomplish the following objectives:

1. In meetings with representatives of the faculty to achieve an awareness of the problems, current research, and achievements of the major areas of human knowledge.
2. To strengthen their interest in the pursuit of higher education and excellence in intellectual achievement.
3. Through academic, personal, and social guidance, to make an assessment of their strengths and weaknesses, appropriate vocational possibilities, and proper procedures for systematic individual development.
4. Through experience in university courses, to start a formal college career so that easy and efficient adjustment to the regular school year can be made for those who are entering college in the fall, and to provide those who are juniors with concepts which will improve their work in their senior

year of high school and encourage them to continue their formal education.

To be eligible for the program, high school juniors and seniors should have a ranking in the top 10 per cent of their high school classes and have academic aptitudes which place them in the highest 10 per cent of a normal population. While it is expected that a number of students selected for the program will be interested in attending Indiana University, students who plan to attend other colleges or universities are also eligible for inclusion in the program. Out-of-state students are encouraged to apply.

The 40 boys and girls selected for the program participate in the FFC colloquium. This colloquium is a noncredit activity which meets an average of three times each week. This portion of the program consists of lectures and discussions by outstanding members of the faculty, demonstrations and practice in the use of library facilities, work on reading and study improvement, and training in leadership activities.

In addition, all FFC students will select college credit course work to total from seven to fourteen semester hours. This total must include an honors-level English composition course, for which the students receive double credit. Offerings provide ample opportunity for participants to select additional double-credit courses and to attempt credit examinations.

A statistical analysis coupled with student and faculty evaluations show evidence that the program is directly beneficial to the students and indirectly influential toward promotion of improved education on both the secondary and college levels. It is anticipated that the program will be modified as educational procedures become more sophisticated and the applicants better prepared for higher education. Continued scrutiny of the program should provide additional data for future publication.—*Keith Hertweck, Assistant Dean, Indiana University.*

LOCATING THE TALENTED STUDENT

The Location of Talented Student Program (LOTS) is a service provided by the Junior (Freshman) Division of Indiana University and offered to the secondary schools in Indiana. LOTS has one primary objective —to assist high schools with the initiation and development of a program suitable to the needs of their talented students. It is expected that the program must be unique in each school. Thus, LOTS is designed so a school may participate in any portion or all of the program without cost to the secondary school desiring the service.

LOTS assists high schools with the broad areas of identification, counseling, and improved instruction for talented students. The term "talented" is used somewhat synonymously with "gifted" and "superior" and is operationally defined as including students who are in the top ten per cent of the general population in intelligence or possessed of unusual creative ability.

For the purpose of description, the LOTS program has been divided into categories:

IDENTIFICATION techniques are reviewed with administrators, and where testing programs are nonexistent or inadequate, a standardized test of intelligence is made available without charge.

COUNSELING of talented students is also scrutinized and, where requested, individual counseling sessions conducted by university counselors are arranged.

IMPROVED INSTRUCTION may be discussed in sessions such as workshops for the entire faculty or a specific group therein, faculty meetings, conferences with administrators, guidance personnel, teachers, and parents. Enrichment and acceleration topics are included, as well as a presentation of varied methods and techniques utilized in some schools distinguished for their handling of superior students.

The response to the LOTS program and the continued demand for the services provided within the scope of the operation indicate its acceptance as an important phase of academic development directly affecting the upgrading of secondary education. It is expected that LOTS will continue to function as a vehicle to help high school students become better prepared to accept the challenge of college life.—*Keith Hertweck, Assistant Dean, Junior Division, Indiana University.*

Iowa

THREE-TRACK PLAN IN DES MOINES

In 1955 a system-wide committee reviewed recommendations of lay and professional study committees and recommended the establishment of a pilot program for academically talented students in our fifth and sixth grades. Two centers were established, and we now have eleven such classes located in six of our 59 elementary schools. This program was so successful that by 1960 parents of the children in the six centers were asking for a similar set-up at the junior high level.

As a result, a K-12 system-wide committee on academically talented students was appointed in the summer of 1961, and it was recommended that the present program be extended to the secondary schools.

Meanwhile, many individual attempts at special grouping for highly capable students were made in both our junior and senior high schools. There was little continuity and articulation of efforts. One continuing project was initiated in 1958 for seventh grade capable students in mathematics in all junior high schools. This group took algebra in the eighth grade, geometry in the ninth, and by the twelfth grade in 1962-63 a new and additional course in mathematics was devised for these students.

In 1960-61 East High School requested approval for a two-track plan in English and social science for the eleventh grade. The two tracks were for the college bound and the noncollege bound. An interesting feature of this plan was the provision for pupil choice of the track to be followed. Specially selected books and other materials were purchased to help facilitate this program.

For 1961-62 Lincoln High School employed a three-level track plan, all grade levels in English and social science.

The Des Moines Board of Education on November 21, 1961, adopted a policy to be used as a framework in establishing a K-12 program for talented students:

1. A K-12 program for talented students be effected by September, 1962;
2. The 1800 students to be included in this program meet these standards: consistently high achievement or marks, ability to think creatively, and a flexibly interpreted IQ of 130;
3. Appropriate recovery measures be provided for the admission or withdrawal of misplaced students;
4. Talented children in grades K-4 be identified and grouped by ability in the regular elementary classrooms;
5. The present centers for talented students in grades 5-6 be continued for those who are eligible;
6. A minimal two track program be inaugurated for students in grades 7-12;
7. Curriculum planning for the talented be coordinated from grade to grade and from subject to subject;
8. The Des Moines Schools affiliate with an Advanced Placement Program;
9. Teachers selected for the talented classes participate in a summer inservice training workshop.

The track plan, three tracks—basic, general, and advanced, is now in its second year in our secondary schools. Several of our junior and senior high schools have talented sections within the advanced track.

Each track has its own textbooks and instructional materials. Within the advanced track in several of the schools is a talented students section, including in many cases students who were members of talented student centers in our elementary schools. Progress is also being made in the other eight recommendations of our Board of Education.—*John H. Harris, Superintendent, Des Moines Public Schools.*

Kansas

HONORS COLLOQUIUM AT ST. MARY'S

St. Mary's High School has established an honors program in cooperation with Saint

Mary's College. Father Eugene E. Grollmes, S.J., of the college, reports that the program is open to sophomores, juniors and seniors, "all of whom are members of or qualified candidates for the National Honor Society sponsored by the National Association of High School Principals.

"At present, there are 14 in the program. These students, in addition to their regular classwork, read a book a week and have a colloquium about the book every Tuesday. These discussions are directed by a faculty member, sometimes the principal himself, Mr. K. D. Moran, and a qualified guest, including several faculty members from St. Mary's College.

"Every four weeks the students change their area of study, and as a result, in the course of one year the students will read 36 books, four in each of nine different fields. The fields this year are: English literature, psychology, American history, chemistry, American government, physics, Greek, drama, and fine arts. A student in the program for three years will have read and discussed 108 books.

"The program is, of course, progressive. For example, this year the students are taking chemistry and physics; next year they will take biology and some form of mathematics.

"The students receive a quality credit for each year they participate in the program, and these credits appear on their transcripts. At the end of their senior year they may, if they choose, take a one-hour, oral, comprehensive examination covering all three years work. If they pass this exam, they receive an additional quality credit.—*Father Eugene E. Grollmes, S.J., St. Mary's College.*

Louisiana

HIGH SCHOOL FOR THE GIFTED

In 1957 the Orleans Parish School Board established Benjamin Franklin Senior High School for gifted students.

To be eligible for admission students must reside in the parish, have an I.Q. of at least 120, and must rank at or above the 50th percentile on the standardized achievement test administered in ninth grade.

The curriculum was worked out in consultation with deans and officials of nearby Tulane University. It is one "of enrichment and intensive preparation for college," according to Estelle Barkemeyer, principal. All students study English, science, social studies, foreign language, and mathematics and must maintain a B average.

An effort has been made to recruit a faculty "distinctively qualified" for this kind of school. A report concerned with the school states that the teachers "must possess well-above-average intelligence, yet be aware of their limitations and share this awareness with their students. They must have a deep knowledge of their subject area along with a tolerance for new and different ideas not necessarily conforming to their own . . . . Above all, they must be able to inspire the students to develop their unique abilities and to strive for high levels of achievement."

The school now has a faculty of 26 and a student body of 445.

Among the 182 graduates of the first three classes were 8 National Merit Scholars, 65 National Merit finalists, 4 General Motors scholars, 15 General Motors semi-finalists, 8 winners of the National Honor Society Certificate of Merit, 16 finalists in the National Honor Society competition, 1 Hunt Foods scholar, 1 Sloan scholar, and 5 winners of Naval ROTC scholarships.

Nebraska

ADVANCED PLACEMENT IN LINCOLN

Students in the three public senior high schools of Lincoln, Nebraska, have qualified for college credit in more than 700 courses while still in high school. This program was started in 1955 by the College of Arts and Sciences of the University of Nebraska.

The program began as an experiment in

Lincoln High School at the suggestion of Mr. William Bogar, principal. One purpose is to encourage good students in the high schools to continue their education beyond the completion of work for a high school diploma. Another advantage is for the good student to start university at a higher level and thus save time. The schools also feel that it is advantageous for these students to have the opportunity to carry university level work without being removed from their home environment.

Courses now offered for college credit are college algebra and trigonometry, analytical geometry, college chemistry, and the third year of French, German, Spanish, and Latin. Upon recommendation of the teacher of one of these subjects, a pupil may take a final examination at the University of Nebraska at the end of the semester to become eligible for credit. Credit is given upon matriculation at the university. Other colleges have also accepted this credit. One graduate earned 22 hours of college credit under this program.

In addition to the university-high school credit program, the high schools offer accelerated classes in the other academic areas. A program for superior students is also provided in the elementary and junior high schools.—*Belle Farman, Coordinator, Senior High Curriculum, Lincoln Public Schools.*

New Jersey

ENGLISH HONORS AT PRINCETON

At the end of their sophomore year, students at Princeton High School are selected for participation in our honors program in English. Selection for such a program is made by the English department chairman in consultation with the sophomore English teachers and the guidance department. Criteria employed are the recommendation of tenth grade teachers, I.Q. scores, reading ability scores, degree of interest shown in English as well as the student's overall school record.

Participation in our honors English program is voluntary. If a student feels he would rather devote the major share of his time and attention to another area, he is urged to do so. Our honors section in English constitutes about five per cent of the class for each of the junior and senior year programs.

The honors sections in English attempt an intensive study of selected literary works. The junior year focuses on American literature, the senior year on English literature. Analysis, interpretation, and appreciation are the three major objectives. Close textual study in class of various works provides the framework for extensive outside reading. Contemporary as well as classic literature is employed. The junior year program might, for example, begin with a study of modern American poetry. Robinson, Frost, or Eliot might pose various literary and philosophic questions which would also be explored in the plays of O'Neill, Williams, or Miller. Miller's "The Crucible" might lead into a study of Hawthorne, the Puritan concept, and its effect on modern American writing. No single literary approach is employed. At times a study of forms might provide the structure for the course. At other times a thematic approach might hold the program together. Still at other times chronology might provide the basic framework. Major attention in the course of the year is devoted to germinal writers such as Melville, Hawthorne, Emerson, Thoreau, and Whitman. Their influence on contemporary authors such as O'Neill, Faulkner, Steinbeck, and Hemingway is traced. The senior year—dealing with English literature—would follow a similar pattern.

Students, at the end of the two-year program, are urged to take the Advanced Placement examination. Our students have in recent years received advanced standing at schools such as the University of Pennsylvania, Swarthmore, and Harvard.—*Allen R. Kirschner, Chairman, Department of English, Princeton High School.*

(*Editor's Note: According to Kenneth E. Michael, Principal, Princeton High School also offers comparable honors programs in* *mathematics and foreign languages, but there was not time to prepare descriptions of these before our printing deadline.*)

HONORS FOR THE TOP FIVE PER CENT

Bridgewater-Raritan High School is located 35 miles from New York City in an area that is largely suburban countryside. The communities forming the school district have a total population of 25,365. Because of the concentration in central New Jersey of much of the nation's industrial research, many residents of the district are executives, engineers, chemists, physicists, and technicians. A faculty of 107 instructs the high school's 1710 students.

Bridgewater-Raritan High School is continuing to refine an "honors" program for superior students in the subject areas of English, mathematics, science, and foreign language. The program, limited to students in the top five per cent of their class, is open to them by invitation only. Past academic performance and genuine interest (motivation) in the subject area are extremely important among the selection criteria which also include scholastic aptitude, teacher recommendations, cooperative tests, and counselor approval.

In terms of class rank and for evaluation of a student's total academic record, the report card grades are weighted so that a "B" in an honors class is the equivalent of an "A" in our academic sections. Generally, the students are permitted to enroll in no more than two honors courses in any given year (languages excepted).

The four-year sequence in English enables the student to complete a program that culminates with a world literature course in the senior year. This course includes a paperback selection of more than fifty titles and other course content that prepares the students for the Advanced Placement exam.

The five-year mathematics program begins with algebra in the eighth grade and concludes with advanced mathematics in the twelfth grade. The advanced mathematics program in senior year comprises, for the most part, the typical college freshman mathematics course.

Biology (BSCS) introduces our honors student to the science offering at our high school. This is followed by chemistry and physics in sophomore and junior year. We plan a senior science seminar to encourage further concentrated study in one of the above areas as well as the selection of an advanced placement course in biology or chemistry.

A three-year sequence in Russian, four-year sequences in German and Latin, and five years of study in French and Spanish are presently available to our students. With the exception of Latin, the audio-lingual method and materials are used exclusively, supplemented by vocabulary emphasis and additional literary works. The language program in French and Spanish begins in seventh grade and makes possible the five-year sequence. . . .

Two major concerns regarding high school programs for superior students keep us a bit apprehensive. Will we continue to be fortunate in attracting and retaining outstanding and specifically qualified teachers to work with these students and programs? Will more colleges and universities realign their courses and course requirements so that superior secondary students will find themselves in a continuingly stimulating and challenging sequential program as college freshmen?—*Dr. J. V. Irion, Principal, Bridgewater-Raritan High School.*

New York

TYPES OF HONORS IN NEW YORK

Robert Kelly, Supervisor of Education for the Gifted, in the State Education Department, sent the following summary of types of honors or advanced sections in New York public high schools:

"1. Usual academic subjects — The most common type honors group (and the simplest) is produced by extend-

ing a traditional subject to encompass either more material or by pursuing the same material in a more academically mature fashion.

"2. Unusual academic subjects — Subjects such as psychology, economics, and computer mathematics are received with great enthusiasm when offered to the very able pupil.

"3. Seminar groups—Seminar groups for able and ambitious pupils are increasing in popularity. Attendance is high even though these groups are often offered without credit. Students are expected to read, think, and discuss on a college level and work independently between seminar meetings. For example, the following passage is a description of an 'Essential Ideas Seminar' sponsored by the Fox Lane School, Bedford:

" 'The Essential Ideas Seminars, allow academically talented seniors to explore great themes of Western Civilization in an academically mature fashion. The five themes chosen for study this year—Punishment, Tragedy, Majority Rule, Communism, and the relationships among philosophy, science, and religion—are primarily philosophical, but they are pursued without regard to subject matter lines. In the 'Punishment' seminar, for example, a student may read Dante, Hobbes, and Euripides as well as contemporary writings by psychological or sociological determinists. A student is encouraged to disregard the barriers of traditional disciplines as he follows the logical progression of his own curiosity. No attempt is made to survey the whole range of Western Civilization. Nor is there any formal attempt to correlate the study of the five seminars; each one stands as a separate endeavor. Even in any one of the three-week periods, no definite conclusions are possible. The aim is to annoy, to provoke, to stimulate, to encourage inquiry, and to show the way toward more extended study in the years to come."

HONORS BY INVITATION

Niskayuna High School is a four-year high school in a suburb of Schenectady. The community is the home of a major industrial research laboratory, a federally owned atomic power laboratory, and is close enough to a major industrial complex so that many more scientists, engineers, and executives make their homes here. I explain this so the reader may have some understanding about the natural endowment and motivation of our students who come primarily from homes which provide a superb intellectual environment. Our salary schedule permits us to select and retain superior teachers, some of whom have college teaching experience.

The honors program starts in the ninth grade with a complicated selection process which has been developed to screen as carefully as possible, all students in all subject areas and bring a variety of sources of advice into play. I shall describe this process in a step format:

(1) Each student selects his electives in consultation with a guidance counselor. All students are required to take four years of English and social studies so these are not elected. Each student is also required to take one arts elective each year, but the range here is very broad.

(2) When all students have completed their program request cards, a list, by grade, of all students requesting each subject in each department is sent to the department head for grouping.

(3) Each department head consults with the teachers in his department who have had experience with the students, and the academic grouping is determined. At this time a list of highly capable, highly motivated students is compiled and submitted to the guidance department for invitation to

participate in the honors offerings in that subject.

(4) The guidance department collates the many invitations and mails them home to the parents of the students invited. Some students may get only one invitation while others may get as many as five. A strong recommendation is included in the accompanying letter that the student should not accept more than two honors invitations during any one year. The preparation is demanding, and very few students have the time to prepare for more than two honors courses. A student who does not accept an invitation to participate in the honors offering in a certain subject may still be placed in an advanced section of that subject where he will be challenged intellectually, but will not be required to prepare in as much depth as in the honors offering.

(5) The student and his family, after consulting with guidance counselors, teachers and department heads, indicate to the guidance department which, if any, invitations they will accept.

(6) After the acceptance deadline has passed, a request is made to all students who might be interested in the honors program, but who were not invited to enter, to submit their names for consideration. These names are then screened, and usually one or two more students are added to the honors sections. This step is important, for in the past it has permitted us to locate some very capable students who otherwise would have been bypassed.

(7) The final list, compiled by the guidance department, is sent to the various department heads for review and for inclusion in the groupings submitted to the administration for scheduling.

It should be noted that grouping is not decided on a basis of intelligence or achievement tests, although these may be used during step five when the student is being advised on his choice of honors subjects. Actually, we use a minimum of tests in our school program, for we have little confidence in the validity of the results obtained. There is no allowance made in our five point grading system for students in the honors sections, but there is one "super" grade indicated by an "H" which may be awarded to a student who shows exceptional creativity in any section of a subject offering.

Advanced placement programs follow the normal sequence of the honors high school courses, but are not always dignified by the title. A student, for example who completes English 12H or social studies 12H, may take the advanced placement examination in English or American History. In the class of 1963, twenty-eight students wrote forty-eight examinations with the following results:

Score	1	2	3	4	5
Frequency	0	15	17	12	4

In addition to the above record, some of our students are tested at the accepting college and receive advanced placement of which we have no complete record.

We have no formal evaluation of our program; we do know that we offer a challenge and some intellectual excitement to our gifted students. The results are evident in the college placement of our students and their records after entry. My major concern is not college credit for this advanced work; for these students are not the type who will work for a minimum of graduating credits. My concern is that the college will, to the best of its ability, place these students where intellectual challenge will continue, and that the student not be bored by a repetition of material already learned.—*Joseph H. Oakey, Principal.*

HONORS FOR STUDENTS, TEACHERS

Hunter College High School offers a six-year college preparatory course to girls in New York City, chosen on the basis of standards set by the school, under the general sponsorship of the Hunter College Department of Education and, in turn, the Board of Higher Education of the city. In November 1963 the student population is 1134 and the prospective graduating class 285. In the light of recent experience, it is expected that 99 per cent of these graduates will be enrolled in college in 1964.

Prospective students must have the recommendation of the principal of their home school, an I.Q. test score of over 130, and an academic average of over 90. Candidates thus qualified from the sixth, eighth, or ninth grades of the city's public and private schools sit for a multiple-choice, machine-scored entrance examination prepared by the mathematics and English departments within the school. The entrance grade on these tests, which are given under the direct supervision of the high school faculty on three days in January, is determined by the number of places available in that year at each entering level. These criteria are established by the principal and an appointed committee of the high school faculty, with the approval of the president of Hunter College. Members of the faculty are appointed under a parallel system.

The student selection process has become more and more rigid in reaction to overwhelming demand from the whole city community, which threatened to tax the testing and grading facilities of the school. The school was created more than fifty years ago when Hunter Normal School separated into secondary and collegiate levels. The classical college preparatory course appealed then only to the small fraction of the population intending to enter college, and admission could be based on essay tests graded by hand by the school's teachers. Since World War II, however, very much as the CEEB examinations have had to become mechanized in response to the increase in applicants, this high school had had to eliminate possibly desirable subjective criteria.

Since the academic homogeneity of the student population makes it atypical, the teacher demonstration functions of the school are specialized. Every department of the faculty has developed advanced and accelerated courses to meet the potential of the students. Professional observers or student teachers within the school therefore see atmosphere and activities not common in comprehensive schools. The Board of Higher Education has described this branch of its system as "a laboratory school for the gifted."

The faculty has offered Advanced Placement courses from the inception of the CEEB program, and some graduates may have taken as many as five of these. All students complete more than the minimal course of study most colleges ask for. Completion of 19 major units on the senior high school level is required for the Hunter diploma.

Grade advisors within the guidance department try to help under-achievers. Frequently their patient attention, sometimes utilizing professional help from the Hunter College Guidance Laboratory, has brought about remarkable improvement. Persistent failure to maintain an average of 80 may result in a request that the pupil withdraw. Such a student may achieve acceptable standing at a general city high school, but it is always with regret that the high school takes this action. A few students leave voluntarily, often because of very long commuting time.

The overwhelming majority stay with the school and live up to their promise. On standardized tests, such as the Iowa series, the student body as a whole ranks in the 99th percentile. In the NMSQT, 73 of this year's senior class earned letters of commendation. College admission records similarly indicate the desirability of Hunter seniors and their likelihood of success in college and graduate schools. The school has no comprehensive post-graduation data, but most students develop a strong alumna loyalty, because of the amount of personal attention they have received from teachers, the stimulation of fellow-students, and the extensive student-run, extra-curricular program. Thus there is a great deal of informally gathered information about the careers of alumnae which indicate that the high school has helped train leaders in every field of activity.—*Miriam Burstein, English and Guidance Departments, Hunter College High School.*

PROGRAM FOR CULTURALLY DEPRIVED

The "Higher Horizons" program in the New York City public schools is not an honors program. It is a program designed to give children in depressed neighborhoods an extra boost in both primary and secondary grades.

Started in 1956 as a pilot program to identify and stimulate "able" but culturally deprived students in one junior high school, the program now has spread to 52 grade schools, with 33,757 students, and 13 junior high and high schools, with 19,338 students. Although the techniques developed in the pilot project remain much the same, the goal has broadened to include everyone, not only the "able."

Briefly, a Higher Horizons school, is assigned more teaching and counseling staff. This extra staff works with the principal to design a program suited to the students in that particular school and participates in classroom teaching as well.

At the elementary level, after experimenting with teams of specialists touring schools in a district, the program now assigns three specialists to each school—two for academic stimulation and one for cultural stimulation. Each group of 10 schools also is assigned a teacher of science and a teacher of library. All Higher Horizons teachers spend half their time in direct instruction of students and the other half in special projects, such as training other teachers, revising the curriculum, and working with parents. The program concentrates on grades 3, 4, 5, and 6.

At the junior-high level, Higher Horizon teachers are used mainly for remedial reading, teacher training, curriculum enrichment, cultural activities, and administration. Junior high principals are asked to use some of the additional teacher time to organize smaller classes in reading, mathematics, and foreign languages.

In high schools, all tenth grade children receive some additional service, either instructional, guidance, or both. After that, principals are free to organize individual programs to meet the differing conditions in their schools and the varying needs of the pupils.

The basic objective of the Higher Horizons program has been to stimulate and help the culturally deprived child earn a high school diploma and then be admitted to college. How has the program fared in terms of its goal?

Starting back in 1957, of the typical class from Junior High School 43 Manhattan entering George Washington High, 89 per cent were below grade level in reading; 88 per cent were below grade level in arithmetic; and 69 per cent had group verbal I.Q. scores below 100.

Looking at this group over a three year period, 1957, '58, and '59, and comparing it in five areas with 329—roughly the same size as the pre-project group—who participated in the Higher Horizons project in the junior high, one gets the following interesting statistics:

1. *Dropouts*—of the 329 students in the project, 258, or 78 per cent, were graduated with diplomas. This record is considerably better than that of the other group.

2. *Academic Diplomas*—there were 108 academic diplomas granted to project students, as compared with 43 for the other group.

3. *Academic Record*—there were 41 pupils with no failures over a three year period for the project group as against only 14 with no failures for the other group. Thirty-seven pupils in the project averaged 80 per cent or better as compared with 11 pupils in the other group; and 15 pupils averaged 85 per cent or better as compared with two in the pre-project group.

4. *Standing in Class*—the best pupils in the pre-project classes of 1957, '58, and '59 ranked 51, 65, and 226 respectively. Comparable figures for the project pupils were: 1960—1, 4, 6; 1961—4, 1962—2, 4, 9. The classes ranged in size from 800 to more than 900.

5. Of the pre-project group, 47 went on to some form of higher education, compared with 168 for the project group. Of the 108 in the project group who earned diplomas, 96 continued their education, a remarkable record for disadvantaged pupils, according to Jacob Landers, Coordinator of Higher Horizons.

Landers also reports that project graduates from the high school received many scholarships and awards. During their stint in high school, 57 were cited for various distinctions, some several times.

One of the most interesting aspects of the project has been the discovery of the importance of motivation in developing potential. Of the 108 who earned high school diplomas, 38 had group verbal I.Q. scores below 100 on eighth grade tests and 16 were below 90. Thirty-eight were one or more years behind in math, and 13 were more than a year behind in reading. "Generally," said Landers, "a junior high school record with many outstanding ratings in personality and many extra curricular and service activities, characterize pupils who go on to higher education despite low junior high school standardized test scores."

Finally, a word about cost. Landers estimates that the Higher Horizons program costs about 50 per cent more per pupil than the regular program. He pegs the increased cost at about $250 per pupil per year.

BRONX HIGH SCHOOL OF SCIENCE

The Bronx High School of Science is 25 years old this year and is one of the best known of the special high schools for superior students in this country.

Any student in New York City can apply, and each year there are about 3,500 applications. Of this number the school admits 1,000 each fall. Total student enrollment is about 2,800.

Purpose of the school is "to meet the needs of boys and girls possessing high mental capacities and a specific interest in science and mathematics." According to Alexander Taffel, principal, "while the school emphasizes science and mathematics, it presents a well-rounded curriculum . . ." The following courses are required of all students: four years of English; four years of social studies; four years of science; three years of one foreign language; three years of mathematics; one year of mechanical drawing; one-half year of science-techniques laboratory; required music and art; and required health education.

Special courses include dramatics, public speaking, journalism, world literature, creative writing, public discussion.

All students must elect at least two of the following one-year courses: "History and Development of Science," "Advanced Clinical Laboratory Techniques" (bacteriology-physiology), "Field Biology," "Nutrition Science," "Advanced General Chemistry," "Chemical Instrumentation and Analysis," "Fundamentals of Electronics," "Advanced General Physics," "Fourth Year Mathematics," "Finite Mathematics," "Advanced Science Techniques Laboratory," "Advanced Mechanical Drawing," and "Advanced General Art."

In addition, there are special electives and six Advanced Placement Courses offered under the auspices of the College Entrance Board Examination program.

Students for the school are selected by means of an examination prepared by the Columbia University Testing Service, which measures aptitude in verbal and reasoning ability. The score achieved on this examination, together with the other intelligence test and achievement scores, as well as the general achievement record, form the basis upon which students are selected for admission to the school.

Once a student is in the program he is permitted to remain unless he desires to transfer to another school of his own volition. In a letter to *The Superior Student*, Principal Taffel wrote, "The number of pupils who cannot thrive in our program is extremely small, and the entire dropout rate for an entering class of 1,000 is under 5 per cent. These include pupils who move out of the city and who transfer to other schools. Practically one hundred per cent of our graduating class goes to college."

As to the effectiveness of the program, Taffel wrote that surveys of graduates indicate that as many as 70 per cent select their professions in science, mathematics, engineering, and related fields. "In this respect," he said, "the school is fulfilling its purpose of identifying and encouraging scientific and mathematical talent.

"The high level of achievement of our students relative to those of other schools is evidenced by the fact that 85 per cent of them or more win New York State Regents scholarships. They also win a large number of other scholarships and make a strong showing in such national contests as the Science Talent Search, the National Merit Scholarship Program, and the Future Scientists of America contest."

ACCELERATION, ADVANCED PLACEMENT

In September 1963, the enrollment for grades nine through twelve in the West Irondequoit High School totaled 1,825 students. Irondequoit is a suburb of Rochester, New York, and has experienced a rapid population growth since World War II. Our secondary school curriculum is now differentiated according to individual student interests and abilities. Consequently, we have three levels of instruction for each grade in English, social studies, science, and mathematics. Accelerated courses which lead to Advanced Placement courses are offered to students who qualify for the highest ability-level group.

Because both the administrative and teaching staff of the West Irondequoit Central School District are dedicated to the improvement of the quality of education the curriculum is in a constant state of alteration and revision to meet the needs of youth in a changing society.

In our school, both accelerated and Advanced Placement programs are open to all students who, after guidance counseling, elect to take these courses. The standards for entering either an accelerated course or an Advanced Placement course are flexible but not permissive. We follow no rigid rules. It is possible for a student who has never taken an accelerated course to elect Advanced Placement. Also, a student may shift from one ability-level to another with the consent of the counselor, teacher, and parent.

In selecting students to be recommended for accelerated courses, guidance counselors review test records and personality traits. No arbitrary "cut-off point" is required for I.Q. scores. Past experience, however, indicates that an I.Q. score from approximately 115 and upward is a basic requirement. In an interview with the student the counselor reviews the results of various standardized tests, report card grades, and past academic achievement. In general, we have found that a "B" record is necessary in the subject of desired acceleration and an overall "B" average is highly desirable. Likewise, serious consideration is given to such personality traits as past behavior, maturity, judgment, drive, emotional balance, and ability to work under pressure. Motivation, genuine interest, and industry are some of the most important personality traits which finally reveal the candidate's potential to pursue profitably either an accelerated or Advanced Placement course.

Following counseling, teacher recommendation and parental approval, a student may or may not elect to take accelerated courses. Again, there is no rigid restriction on the number of accelerated courses taken in one year by a student. Students who elect to take Advanced Placement courses are expected to remain in the course and to take the College Board Advanced Placement Examination in May of that school year.

At this time, our evaluation of our program must be necessarily subjective. Advanced Placement has now become an integral part of our program. In May 1959, five different Advanced Placement examinations were taken by 56 students. In the school year, 1963-1964, we have 148 students enrolled in Advanced Placement courses in American history, biology, chemistry, English, European history, mathematics, and physics.

This year, selected language students will also be taking Advanced Placement Examinations in French, Spanish, German, and Latin.

In comparing our examination results with those recorded by the College Entrance Examination Board in the "Distribution of Candidates Grades" in the annual *Grade Reports,* we find that the Irondequoit students performed well; the mean has been consistently higher than the mean for all Advanced Placement candidates. Fortunately, most of our students have been granted both credit and placement by many colleges and universities. As a result, some students are completing their undergraduate work in three years and their Master's Degree in the fourth year of college.

Because our teachers conscientiously strive to maintain a high level of instruction, our students experience little difficulty in adjusting to the college-freshman year. Frequently, college freshmen who were not granted Advanced Placement are placed in a special seminar or honors group.

The intellectual challenge presented by the Advanced Placement courses has provided stimulation to teachers, students and the entire school system. Performing its function as a necessary part of this program, the high school library has kept pace with the heavy demands placed upon it. It is the very heart of the Advanced Placement Program. Today, our library provides references, books, and materials on a collegiate level.

While numerous gratifying reports commending the program have been received from students, parents, and college personnel, we are not complacent. It is our sincere conviction that curriculum improvement is a continuous process; we must constantly search for better ways to measure and evaluate the effectiveness of our program. The success of the Advanced Placement Program at West Irondequoit is largely a result of high-quality teaching on the part of conscientious and energetic teacher-scholars.—*Mrs. Hazel Lalonde, Vice Principal, Irondequoit High School, Rochester, N. Y.*

SATURDAY SEMINARS IN THE CATSKILLS

"Saturday is the best day in the week," said Evelyn Fairbairn, of Margaretville Central School, referring to the Saturday Seminar Program sponsored jointly by the Catskill Area School Study Council and the State University College at Oneonta, New York. This program, originally discussed in the February 1960 issue of *The Superior Student* is now in its sixth year, is out of the experimental stage, and seems fairly well established.

Participating schools have urged its enlargement with a result that from a start of 50 students from about 20 schools in the Fall of 1957, currently 32 schools in a three-county area around Oneonta participate, sending a total of 225 students. Tuition is $35.00 for a semester, $70.00 for the whole year, paid in most cases by the local school boards, and by the parents in two school situations.

Classes meet for 20 Saturday sessions from late September until April, from 9:30 a.m. to 12:00 noon in buildings on the campus at Oneonta. Members of the college staff serve as instructors.

From a beginning of two seminars, there are now eight classes offered. Humanities I, for 25 high school juniors predominantly, has for its theme "Communication in the Arts," and touches on philosophy, drama, writing, short fiction, music, speech-making, art, poetry, and films. Humanities II, for seniors, goes more deeply into several of these areas.

A math seminar discusses sets, logic, Boolean and matrix algebra, coding, geometry, tropology, and the Calculus.

A new seminar, begun in the Spring of 1963, is in psychology. More students apply for this area than for any other. Thirty students are chosen for the Fall session with a repeat performance for 30 different youngsters in the Spring.

Science continues to attract the second highest number of applicants. This year 40 were chosen from about 150 applicants. Twenty take science in the Fall and math in the Spring, and for 20 the sequence is reversed. The stress in science is in biology laboratory and field techniques.

Social science offerings now include an introductory class touching on geography, political science, sociology, anthropology, and economics, and a second seminar in a specialized area; e.g., Southeast Asia or Japan and Korea.

An evaluation meeting is held each year, attended by principals and guidance counselors. Seminar students are invited to join them at a luncheon later, which is followed by an address by a contributing person in some field of academic endeavor. Reports of these evaluation sessions are available.

This Saturday Seminar Program was described in more detail in the January 1962 issue of *New York State Education.* Average school enrollment in the top two grades from which seminar students are chosen is 101. On the average each school sends 5.3 pupils, who comprise 5.2 per cent of its juniors and seniors.

John and Jill can now get learned and burned at the same time, for two Summer Seminars, an offshoot of the Saturday Seminars, were begun in July, 1963. Six schools sent a total of 27 students. A visiting Fulbright professor taught a course on Modern Japan for 10 sessions from 9:00 a.m. to 12:00 noon. A second seminar in art, aesthetics, and painting composition was offered. Summer attendance averaged 92 per cent, slightly above the usual Saturday figures.

And so this rural enrichment program has changed and expanded, attempting to stay in tune with the times, and reflecting our society's current population and knowledge explosions.—*Robert M. Porter, Coordinator, Catskill Area Saturday Seminar Program.*

North Carolina

GOVERNOR'S SCHOOL AT SALEM

A summer school for superior high school students was launched at Salem College, Salem, North Carolina, this past summer, and because the idea for it originated with Governor Terry Sanford's staff, it is called "The Governor's School of North Carolina."

Four hundred superior students from throughout the state were admitted to the school for an eight-weeks residential program on the Salem College campus. They were selected from 1,000 nominees recommended by superintendents of the state's 173 school districts. At the school each student spent 18 classroom hours a week in his major-interest area, three hours a week in a minor area selected from one of the arts, and four hours a week in a class entitled "Essential Ideas."

The latter was an experimental course designed to "convince our gifted youth of the present compelling importance of theory in solving world problems; to stimulate interest in the basic ideas perennially important to all areas of human thought; and to furnish background for such theoretical thinking by familiarizing pupils with some of the great ideas of our Western philosophical tradition." Readings were mainly from the *Encyclopedia Britannica* Great Books list.

Members of the faculty for the school were recruited from throughout the country.

No tuition was charged, and board and room, books, and materials were furnished free of charge by the school. Students had to pay only for travel costs and their personal expenses.

The school is being financed these first three summers by a $225,000 grant from the Carnegie Corporation of New York and a matching amount contributed by 11 other foundations and industries in Winston-Salem. After 1965 the State of North Carolina will be asked to underwrite the program itself.

According to C. Douglas Carter, Program Director on the administrative staff of the school, Professor George S. Welsh, psychologist at the University of North Carolina, administered a number of tests to those attending the school in an effort to put together a composite profile showing the students' academic abilities, their interests, creativity, and personality. Ratings also were made of faculty members in terms of motivation, aptitude, progress, and ability. Neither sets of data had been processed when this issue went to press; but Professor Welsh did provide us with a list of tests he administered to the students:

General Intellectual — Terman Concept Mastery Test.

Interests — Strong Vocation Interest Blank and Allport-Vernon-Lindzey Study of Values.

Personality — Minnesota Multiphasic Personality Inventory, California Psychological Inventory, and Gough Adjective Check List.

Creativity—Welsh Figure Preference Test, Guilford (special scales), and Torrance (special scales).

North Dakota

HONORS IN ENGLISH, MATH

Rapid City High School offers honors or seminar classes in grades 10, 11, and 12 in addition to a grade-12 college-preparatory curriculum in the fields of both English and mathematics.

To select the students for these classes, the guidance department uses several techniques of identification, the most important of which is the nomination of the students by classroom teachers. The guidance personnel feel that the systematic observations of teachers indicate best whether the pupils have not only the mental capacity, but also the desire to do the work which these special classes require. Results of aptitude, intelligence, and achievement tests are considered in selection as well as facts concerning attendance, general interests, emotional traits, social adjustment, and grade averages in other subjects. Conferences with parents of nominees are also held.

In the area of English, there are two honors classes for both the sophomore and junior levels and two classes of advanced placement at the senior level. The enrollment in each of the classes is limited to approximately twenty students, because capable and intelligent students working together in small groups stimulate each other to greater intellectual activity than is ordinarily found in the regular English classes.

Equal time and attention is divided between composition and literature. The basic training in composition includes the frequent writing and careful revision of themes on subjects sufficiently mature to challenge thought and expression. Proficiency in organization is stressed as is the mastery of the mechanics of writing and the exact and appropriate use of vocabulary. In literature emphasis is placed on the quality rather than the quantity of the students' reading. Teachers try to develop the students' abilities to understand a piece of literature, to recognize the theme, to understand the author's ideas and attitudes, to understand the emotions, and to form critical judgments. Selections for study are made from the best of American, English, and world literature.

The honors mathematics program is designed to challenge the capable students by offering an enriched program. In this high school the program attempts to prepare the students in the fundamentals of mathematics and in the understanding of number concepts. The courses offered are plane, solid, and analytical geometry; algebraic concepts through college algebra; trigonometry; and an introduction to the Calculus. Through this program of grouping, the usual curriculum is completed in less than the usual allotted time, which leaves time for the teaching of extra concepts.

Since these classes of selected math and English students are competing constantly with intellectual equals, they are placed in a situation in which they dare not become lazy thinkers, time wasters, behavior problems, or poor performers.

Ohio

ADVANCED PLACEMENT IN AKRON

Stimulated by a $25,000 grant from the Fund for the Advancement of Education of the Ford Foundation in 1959, The University of Akron continues to offer academically talented high school seniors the opportunity to take college-level courses on the university campus while in attendance in high schools. Although the grant has terminated and the costs involved are now borne by the individual students qualified for such experience, the program is still attracting many able high school seniors. However, the number of students involved each year has been reduced from 75 to approximately 40.

These young people are accepted into any college course for which they are prepared, and they are integrated into regular campus classes. The most popular courses are English, mathematics, history, and chemistry.

Full college credit is given the students for the completion of their courses, and so for all practical purposes they are both high school and college students at the same time.

This program, when coupled with the expanding advanced placement offerings in the Akron area high schools, is doing much to assist academically talented high school graduates begin their full-time college experience at an advanced level. It is the intent of the university to broaden this program even more so that either juniors or seniors may take advantage of this opportunity at any time during the academic year, including the Summer Sessions.

D. J. Guzzeta, Vice President and Dean of Administration at the university, says the advanced placement students do better than regular students. "Grades earned by these selected academically talented high school seniors," he reports, "are rarely below a 'B.' Obviously this is not the case in a regular class."

Oklahoma

BROCHURE ON SUPERIOR STUDENTS

Joe A. Leone, Director, Guidance and Counseling, Oklahoma State Department of Education, wrote that the department does not have a full-time person devoted to working with superior students, but that it does have a committee on superior and talented pupils appointed by the Oklahoma Curriculum and Improvement Commission. This committee recently published a brochure containing suggestions for educators and school boards on the education of superior students. Among other things the brochure suggests the following seven steps to be taken before launching a program:

1. *Involve the faculty in a study of what is presently being done for these pupils. The study might include:*
   - *a. A comparison of pupil achievement in various subject areas with academic ability.*
   - *b. An analysis of elective subjects taken by last year's superior high school graduates. (Were these students' selections in keeping with their ability?)*
   - *c. A survey of superior students who dropped out before graduation.*
   - *d. An analysis of behavior of the more able students who were discipline problems.*
   - *e. A list of superior students who did not go to college and the reasons why.*
   - *f. A follow-up of college success of superior students.*
   - *g. A formal questionnaire sent to and/or interviews with graduates who are in college.*
2. *After analyzing your own situation consider the various plans developed by others and then evolve plans that seemingly have a chance of succeeding in your school.*
3. *Resolve first to improve what you are already doing. Second, begin new plans in a small way on an experimental basis. Third, begin with faculty members who have shown the greatest interest in superior pupils and have been successful in teaching them.*
4. *Be willing to spend some money on materials and equipment. Organization is not enough.*
5. *Discuss your plans with your school board and community leaders but avoid too much publicity. The latter could well backfire.*
6. *Periodically evaluate what you are doing. Your initial planning should include methods of determining how well you are succeeding. No sound program can develop otherwise.*
7. *Expect problems you have never faced before. Progress is not without its hazards, but the challenge can be exhilirating.*

Oregon

FOUR YEARS OF HONORS IN OREGON

Charles P. Haggerty, Supervisor, Able and Gifted Child Program, Oregon State Department of Education, summarized in a letter that state's programs for talented high school students:

"The State of Oregon is entering the fourth year of a program to encourage districts to establish offerings for able and gifted students. Districts representing more than half of our student population are now participating in the program, and many of these have moved ahead with programs at the secondary level.

"Typical among these arrangements are grouping for three and four levels of ability in one or more academic areas; special seminars for small groups of highly gifted in areas associated with specific subjects or more broadly directed toward the liberal arts or social sciences. Closely associated with the first of these is the system of honors grouping and advanced placement programs which make it possible for high school students to attain college credit. The six state institutions and six private colleges are cooperating in the Advanced Placement Program.

"As you may know, the Oregon program sponsored by the State Department of Education is a concerted effort toward initiating team teaching at both the elementary and secondary level, and although we are still in the first year of this effort, many districts are initiating procedures that will capitalize on the unique strengths of the teachers and at the same time make better provision for individual differences by returning the responsibilities of learning largely to the student."

ADVANCED PLACEMENT IN EUGENE

The overall educational program in Eugene is geared to the individual needs of the student. Therefore, a program for the superior students *per se* does not exist. However, several types of classes are available for the academically talented and motivated senior high student. The senior high classes for able students is part of a continuous enrichment program that has its roots in the elementary school Resource Teachers program. The Resource Teachers spend at least one-half of their time in working with the educationally able and gifted as well as with those children having special interests and abilities.

The first senior high program, named the Honors Program, is open to juniors who have demonstrated superior achievement in the study of English. These classes are more rigorous than the regular English program and successful completion serves as a factor for entrance to Advanced Placement English during the senior year.

Advanced Placement classes are offered in five areas. An American history class, which replaces the required course, is available for juniors. The able and ambitious senior may select English, European history, biology and/or mathematics. Entrance to the Advanced Placements Program is dependent upon at least seven factors: 1) teacher recommendation; 2) test information; 3) previous grades; 4) student motivation and interest; 5) attendance; 6) health; 7) parental consent.

The composite score and selected tests of the Iowa Tests of Educational Development are used for general screening of applicants in all areas of advanced placement. Other factors being equal, the student must rank at or above the 90th percentile on the composite and special test areas of the ITED. In addition to the use of an achievement battery, special area tests are given to assist in determining the admittance of a student to advanced classes in mathematics. It is necessary for the student to maintain an "A" or "B" grade to remain in the Advanced Placement Program.

The effectiveness of the Advanced Placement Program may be judged from the following data: During the 1960-61 school year 29 high school seniors were granted 302 hours of credit. The credit per individual ranged from four to 45 hours. The school year of 1961-62 saw 24 seniors earn 227 hours of credit.

In addition to scheduled Advanced Placement classes, other classes are advanced in nature, and students from these classes (French and chemistry) have received college credit for high school work. This year Eugene initiated a humanities class for able students. This class uses a depth approach to the combined areas of English and history. The success of this class will be evaluated during the Spring of 1964.

In summary, Eugene offers the able student an opportunity to participate in five Advanced Placement classes as well as advanced classes in the areas of foreign language, science, mathematics and the humanities. The level of these classes is quite high because of our continuously challenging the able student from grades one through 12.—*Charles E. Stephens, Coordinator, Eugene Project, Eugene Public Schools.*

COOPERATIVE PROGRAM FOR THE GIFTED

The Jackson County Gifted Child Program is a cooperative venture between the 11 school districts of Jackson County, the Intermediate Education District, and Southern Oregon College. The program, encompassing grades 1-12, is designed to enhance the learning opportunities for the top 20 per cent of the student population. It is under the direct administrative direction of the Jackson County Intermediate Education District and is jointly financed by the district and the Oregon State Department of Education. There is no direct cost to the student or participating schools.

The scope, development, and evaluation of the program is the responsibility of a county-wide executive committee composed of representatives from the participating school districts and Southern Oregon College. One of the more successful phases of the program is the Saturday Enrichment Classes for able high school juniors and seniors conducted annually on the Southern Oregon College campus. The Saturday classes, in session for eight weeks, are designed to enrich the curricular offerings available to students, provide opportunities for inter-action among high-ability students, acquaint students with college-level instruction, and encourage subsequent college attendance.

Participation is limited to those students who have previously displayed exceptional ability. This is usually defined as IQ in excess of 120 on a group test, two years reading advancement, upper 95th percentile on a standardized achievement test, and teacher recommendation. Two hundred and fifty students from eight high schools participated in the 1962-63 program. Course offerings were Expository Writing and Contemporary Values, Literature and Contemporary Values, World Literature, two sections of Creative Writing, three sections of biology, two sections of Projects in Chemistry, two sections of Projects in Mathematics, and the Study of Business Organization. Instructors selected from the Southern Oregon College faculty by the college administration and the program's executive committee are paid $200 for teaching the eight sessions.

The classes, organized on a project basis, are designed to permit the students maximum participation in areas of special interest. Student participation is further enhanced by limiting class enrollments, except in the literature sections, to 15 students. Students are given neither grades nor credit. A notation of participation is placed in their cumulative record.

Evaluation is basically subjective. Students, faculty, and parents, all indicate overwhelming enthusiastic support for the program. Follow-up studies indicate that college attendance of student participants has increased from 75 to 93 per cent.

The Jackson County Gifted Child Program also has a pilot project phase designed to stimulate curriculum improvement in the local districts. Projects sponsored under this section of the program include humanities seminars, creative writing classes, individual science projects, electronics, and a philosophy class at the junior high school level. Coupled with the pilot project section is an aggressive identification program operating in all school districts.

One of the greatest values derived from the program has been a general county-wide interest in the educational needs of all students and a spirit of experimentation and research to meet these needs.—*Dealous L. Cox, Assistant Superintendent, Jackson County Intermediate Education District.*

HONORS IS A PANDORA'S BOX

It was in the early fifties that the lid of the box was opened and the devilish problems began to pop out. We had such a nice, neat school program in Portland before that. What a sixth grader, or a ninth grader, or a high school senior should be doing was well understood by everybody. We knew what to teach and how to teach and the pace at which all children should learn.

At the instigation of the local board of education, and with the help of the Fund for the Advancement of Education, we established a plan for guiding able youngsters through more appropriate studies at a pace more nearly in line with their abilities. Each elementary school and each high school was encouraged to regear offerings, regroup students, rewrite courses, and regard boys and girls as sufficiently different from each other to warrant new offerings. Each school was given additional faculty to bring about necessary changes, gather pertinent data, and establish appropriate classes. Since we recognized that "giftedness" was a relative quality having to do with capacity to learn in school, it was decided to give attention to ten per cent of the boys and girls at the top of the capacity-to-learn scale. In addition, the 10 per cent most talented in art, music, writing, and dramatics were identified and found to overlap with the first group to a considerable degree.

From the beginning youngsters responded well to the program, developed new interests, progressed rapidly, and thrived on courses normally intended for later years. High school seniors developed new skills for analyzing literature, attacking mathematics and science problems, discussing and gaining insight into social, political, and economic institutions. Those who went on to college, and nearly all did, had a distinct advantage.

The result was that in place of a neat program of studies the whole thing became complicated. Example: ninth grade students, pre-1952, took either general mathematics or first-year algebra. Then it was discovered that some students could move more rapidly through algebra, and others needed a slower course than general math. It became apparent that some eighth grade students could do well in algebra and were ready for second-year algebra or geometry by the ninth grade. Result: five or six math offerings were needed in the ninth grade. The same is true to some degree in foreign language and science.

From a small beginning in a few schools, the program has grown to include all schools of the system. During the current school year 7,400 students are attending one or more special classes in elementary schools and high schools. This is nine and one-fourth per cent of all boys and girls enrolled in the schools. No longer are foundation funds available for assistance, but the school system sees sufficient value in the program to continue it in full force. In recent years the state legislature of Oregon has allotted funds to aid in the support of such programs. In dollar costs, each identified student represents an additional annual expenditure of $56. Nearly all (96 per cent) of the extra cost is in salaries for teachers.

In the Portland program the typical elementary school program of an exceptionally capable youngster would be as follows: normal self-contained homeroom, four-fifths time; special classes, one-fifth time. The typical high school program of such a student would be: normal heterogeneous classes, three-fifths time; advanced sections or seminars, two-fifths time.

When the box was opened in the interest of capable youngsters, other problems, some seemingly unrelated, also popped out. By 1957 it was apparent that high school courses for all college-able students needed revision and modernization, and a five-year project involving hundreds of teachers and college professors has just been completed. New approaches to the methodology of high school teaching, mostly in science, mathematics, and foreign language but to an increasing degree also in English and social studies, have developed on a nationwide scale. Concern has rightly developed about the appropriateness of present courses and methods for slow learners since it is they who are now farthest out of step.

The same mental muscles which were used to open the box have been severely exercised in coping with the problems which escaped. The result is that boys and girls are getting a better education, but the difficulty of administration and teaching is multiplied beyond any expectations.—*Clifford W. Williams, Director, Special Curriculum Projects, Portland Public School.*

INTER-SCHOOL SEMINARS

The Curry County, Oregon schools began a gifted child enrichment program in the fall of 1961. This has been conducted on an interschool seminar basis with coordination of pupil activities.

We have had no rigid guideposts in this work but have tried to adhere to the following concepts:

1. Children are to be selected with minimal I.Q.'s of 135.
2. Groups are to meet out of school time and explore areas which are not normally a regular portion of the school's curriculum.
3. Participation is voluntary.
4. This participation is to be terminated if, after enrollment in a group, the student's regular classwork tends to decline in quality.
5. Individual school groups meet regularly at least once a week for individual seminars and on an inter-group basis once or twice a month. Advisors meet twice monthly.

The techniques used in studying any subject or area have varied greatly, but the following ideas have frequently been utilized:

1. Outside specialists in the area to be studied have been called upon to give a common background to all schools and students in the program prior to any seminar meetings. These have come from all areas and levels in the state.
2. Study materials have been made available to the students, and individual seminars conducted, before any interschool seminars were held.
3. These interschool meetings have included either one school reporting to others, discussion, or outside authorities talking with the groups and participating in discussions with them.
4. We have had authorities both initiate and conclude various items under study.

In conclusion, the groups are well accepted by the communities within the county and by the students. It has become an honor for the student to be selected for participation in this group.

We have found, also, that faculty advisors from each group have needed their routines and activities structured more than have the students who participate. These students seem to retain more enthusiasm and study more independently if they are not hampered by a rigidly structured, pre-conceived plan of study.

Last, we have found that student participation in the selection of topics and techniques of approach for study of each topic has been a most effective method in insuring continued pupil interest and participation. In short, our biggest problem has not been to motivate and structure, but to coordinate activities to provide the materials essential for study when they are needed and direct the activities of the students as these deviate too widely from the area currently under study.—*Charles H. Seger, Superintendent.*

HONORS ON THE "C" TRACK

Beaverton, Oregon School District No. 48, fourth largest in the state, is a unified administrative body (grades 1-12) enrolling nearly 13,000 students. The district operates two high schools in the present 6-2-4 plan of organization, but will switch to a 6-3-3 plan as soon as builders can complete authorized intermediate school housing. The two secondary schools of the district, Beaverton High School and Sunset High School, this year have a combined enrollment of 3,800 youngsters. This report is concerned with their curricular offerings for the superior students.

For several years the secondary schools have channeled students into classes according to the youngsters' ability levels. Three tracks are operated, designated as C, high track; B, regular track; and A, low track. The C track group constitutes from 10 to 20 per cent of class enrollment, and members are assigned to one or more of the accelerated and enriched courses offered in several subject matter areas. Obviously, a program this broad cannot be termed one for the truly gifted child. In District No. 48 the designation C track program has been more satisfactory.

Complete four-year sequences in the C track program are offered in English (fourth year may be APP), mathematics (algebra, geometry, intermediate algebra-trig, and number theory with college algebra), and science (biology for top freshmen, chemistry, physics, and second year biology). In addition, a two-year sequence in American Institutions replaces regular eleventh grade American history and twelfth grade modern problems for one section of the most capable social studies students.

All C track courses are presented with the rigor and challenge necessary to take the best students to higher levels of thought and learning. Assignments extend over long blocks and extensive reference reading is required. Questions and class work reflect a search into the unknown. Instruction is in the hands of master teachers, the majority of whom have done specialized college work in conducting enriched courses.

Heart of the identification process for the tracking program is the counseling center in each high school. The aim in identification is to find the best learning situation for maximum development of each individual. Each student has his own counselor, a guidance expert who will assemble all the needed information about the student and will assist in final track placement. Grouping is based on three factors: standardized test information, observation and recommendations from previous teachers, and parental requests or demands. These are public schools; therefore, they do not dictate. Any student will be placed in a higher track if the parent and student insist. Conversely, students may decline high-track placement. Track changes are possible at any time during the year or from year to year. In actual practice the recommendations of the counseling services usually have been followed.

Space does not permit a complete description of the testing program, but it may be enough to say that tests are sequential—mental ability, achievement, aptitude—and are repeated at intervals. No single score is considered final, and results are under constant evaluation.

Performance in the subject is the one critical factor for remaining in a C track course. Competition is keen, and motivation is as important as ability in determining a student's success.

To prove effectiveness of the C track program, the high schools can offer little more than college grade reports of former students. A true follow-up program on graduates does not exist. In general, the graduates who did well in C track courses do equally well in similar courses at college level. Isolated reports exist of certain individuals having received advanced placement or of others having been registered in honors courses. . . . — *John D. Needham, Director of Information, Beaverton High School.*

Pennsylvania

BUCKNELL HELPS RURAL STUDENTS

Programs for superior high school students in rural and semi-rural areas are confronted with scarcity in two forms: a scarcity of enough talented students in any given school to justify a program geared to their abilities and interests and a scarcity of the necessary educational facilities in their schools. The problem of these students is aggravated additionally by the fact that these areas frequently lack many of the cultural facilities commonly to be found in urban centers. The Bucknell Saturday Morning Project, an enrichment program for superior high school students from the rural areas and small towns surrounding Bucknell University, was conceived as an approach to this problem of a dual shortage of students and resources and was part of a larger program, the Upper Susquehanna Valley Program of Cooperative Research.

Beginning in 1959, five small high schools were invited to select five of their most able juniors and seniors to participate in a two-hour literature seminar each Saturday morning. The seminar, which was held on the Bucknell campus, was conducted for 30 weeks by an extraordinarily enthusiastic and able professor of literature. The seminar, organized around 16 books, undertook during the first semester, to analyze man's social relationships through the study and discussion of such works as *Huckleberry Finn,* Thoreau's *Walden,* de Tocqueville's *Democracy in America,* Plato's *The Republic,* Austen's *Pride and Prejudice,* and Shakespeare's *Twelfth Night.* The work of the second semester was organized around the theme, the nature of man and the nature of the universe. Students read and discussed James' *Varieties of Religious Experience, The Holy Bible, The Teachings of the Compassionate Buddha, Oedipus Rex,* Eiseley's *The Immense Journey,* Conrad's *Lord Jim,* and Koyre's *From the Closed World to the Infinite Universe.* In addition to the two principal themes, the students considered the effects of different literary styles and modes of expression upon what was being communicated by each author.

While reading lists have varied from year to year, the Saturday Morning Project has continued in essentially this form and under the direction of the same teacher. During its first year, it was supported by a grant from the Ford Foundation but is now completely self-sustaining, the costs of books and the teacher's salary being borne by the participating school districts. Student reactions continue to be excellent. Discussions are lively and only five of the first 100 students who entered the program failed to finish the year's work. Weekly attendance has been very good, despite the fact that the students must not only give up their Saturday mornings, but must travel in some cases distances up to twenty-five miles, often during inclement weather. It should be pointed out, perhaps, that students receive neither high school nor college credit for participation and must bear their own transportation costs.

In 1960, an additional 25 junior and senior students were selected from seven high schools for participation in a two-semester program in modern mathematics. Like the program in literature, this program is conducted on Saturday mornings on the Bucknell campus, and since its initial year has been self-sustaining. Primary emphasis has been placed upon the logical development of ideas in mathematics and upon the role of modern mathematics as a basis for later work in mathematics. In 1961 and 1962, three programmed texts in mathematics (McGraw-Hill) were developed by members of the staff of the Upper Susquehanna Valley Program to provide self-instructional units on *Logic of Mathematical Proof, Sets, Relations, Functions, Groups and Fields,* and *Probability Theory,* and were used for work outside class. Both student attitudes and achievement in the mathematics seminar have been excellent. Of the first three groups, totaling 75, ten dropped out before the end; a low rate of attrition considering the volunteer character of the course and its rigorous nature.

It is probably worth noting that, for socio-economic reasons, few of these students ultimately enter Bucknell, and the Saturday Morning Project has not had as its purpose accelerating, by-passing, or replacing any instrutcional programs in existence in the high schools from which the participants come. Rather, it has been aimed at pooling the supply of gifted students and providing resources and intellectual stimulation beyond the means of any single school or community in the program.—*Charles Jones, Director, Upper Susquehanna Valley Program of Cooperative Research, Bucknell University.*

PITTSBURGH'S AWARDS FOR TEACHING

The programs described in this issue are concerned with superior students in the schools, but we would like to report on one program for superior public school teachers.

This is the Award of Merit for Outstanding Teaching Program recently inaugurated in Pittsburgh. As a result of this program ten outstanding teachers were honored at a special convocation this past fall and given tangible awards of $1,000 each.

The cash awards were made possible by a grant to the schools for the program by the Edgar Stern Family Fund.

The idea for such a program came from Dr. Alan Blackner, Dean of Phillips Academy who, following a year's study of the Pittsburgh schools, had recommended that something tangible be done to honor the fine teachers in the system. His recommendation came at the same time that Helen Hill Miller, of the Stern Fund, was investigating a plan for the recognition of intellectual excellence, especially in teaching. Mrs. Miller heard of the interest in some kind of program in Pittsburgh and helped the authorities set up the awards plan on a pilot basis. Of the $1,000 awarded to each recipient, $500 is for the teacher's personal use and $500 is to be used by the teacher "to encourage the aspirations and development of individual students."

Recipients for the first awards were selected by a committee of community leaders working from a list of 225 nominees submitted by high honors students and former class officers who attended the Pittsburgh high schools from 1947 through 1961.

The awards were made during an "Honors Convocation" held in the Pittsburgh Soldiers and Sailors Memorial Hall.

Vermont

SUMMARY OF PROGRAMS IN VERMONT

The Department of Education conducted a survey designed to discover what if any provisions were being made for the top 18 per cent of the talented students in grades one through 12. The total number of students in this category was 16,331. Of this total, 6,998 in high school were afforded the following special provisions:

1. *Special learning opportunities—2,616 students.*
2. *Enrichment program—869.*
3. *Acceleration—450.*
4. *Special grouping—2,546.*
5. *Honors courses—221.*
6. *Seminar—91.*
7. *Advanced placement—12.*

Another 193 students were being accommodated in a variety of other kinds of programs designed for superior students.

Copies of the report, Vermont's Educationally Advanced Children, *from which this information was taken can be obtained by writing A. John Holden, Jr., Commissioner of Education, State Department of Education, Montpelier, Vermont.*

HONORS IN ENGLISH AND MATH

Wallace E. Green, Supervisor of Secondary Curriculum, Burlington High School, Burlington, Vermont, sent the following descriptions of honors courses in English and mathematics:

"Honors courses in English are offered in the high school in grades 10, 11, 12. Students make application each year; and final selection of those admitted to the course is made by a faculty committee.

"The honors course is designed for college preparatory students who have a special ability and interest in the study of literature and in writing. At each grade level emphasis is placed on the close reading and intensive study of selected literary works, as well as on increased proficiency in composition. Opportunities for creative writing are also offered. In addition, the course aims at the extension of the student's range of reading and acquaintance with literature. A good deal of critical writing is required.

"The course in grade 11 focuses in American literature, organized by idea units. Grade 12 students study rather intensively selected Greek plays as well as the literature of England.

"Poems by both English and American writers of the past and present are studied analytically in the twelfth year. A few seniors take the Advanced Placement Examination in English.

"The honors program in mathematics starts at the eighth grade level. Approximately twelve per cent of the class, those with high mathematical ability, take the regular elementary algebra course. This course is followed by advanced algebra in the freshman year and by plane geometry integrated with solid and coordinate geometry in the sophomore year. As juniors this class takes a course which includes trigonometry, analytical geometry, and a functional development of the real number system. During the senior year the class studies elementary functions from Allendoerfer and Oakley's *Fundamentals of Freshman Mathematics*. The fifth year mathematics course is concluded with an eight to twelve-week unit in the Calculus.

"Each year there are one or more students who participate in the regular mathematics program at the University of Vermont. Only the most talented of the students in the honors program are encouraged to take the university courses. This usually occurs at the conclusion of their junior year. The students take a basic mathematics course at the six-week summer session and follow this with the regular calculus course during the academic year. Two students in the past three years have started the university program at the end of their sophomore year."

HONORS IS FOR EVERYONE

Dr. Paul E. Kirsch, Principal of Bennington High School, Bennington, Vermont, says he and his faculty decided against programs for superior students as such and, instead, are trying to offer superior programs for all students:

"Although I fully realize that this is a goal difficult to reach," writes Dr. Kirsch, "nevertheless it is a clearly stated, understood, and accepted goal of the faculty of this school. Indeed, we particularly reject the concept of a 'tract' program that segregates children into different learning levels. Of course, we offer special programs that will be particularly attractive to intelligent and superior children, but we are aiming also to make the 'plainest' class brilliant in its attempt to develop the best in our children.

"We believe that the key to our program for superior students is our decision to offer (1) individualization of scheduling, (2) courses of high quality and merit, (3) superior methods of instruction with adequate equipment, (4) and of course, competent, qualified, and professional teachers. Brief examples of each of these will demonstrate the practical application of our basic assumption.

"First, we believe that the only way adequately to individualize scheduling is to maintain a guidance staff sufficient to insure approximately one counselor for each 300 students. The particular goal of our counselors is to help each child develop through our curriculum according to his own enlightened choices. I suppose one might say that a side benefit results from allowing children to make wise decisions concerning their own future life: education for decision-making. All too often superior students are all thrown into the same mold in the way of courses, teachers, and preparation and, as a result, they are not permitted to develop their own talents and capabilities. Thus, children without these opportunities of choice too often fail to live well in a world in which choice is an everyday matter of fact.

"Second, it is not possible to operate any program for superior students without developing individual courses of study that are, in and of themselves, literate, intelligent, and intellectual studies. We are really moving forward in this line, and our superior students are able to choose among a variety of courses of high quality. For example, this year we have instituted a tutorial course concerning world ideologies in which two specially selected and trained teachers meet with 16 students. Not only are the children involved in learning about world ideologies, but they are also involved in serious research in original sources. This class meets on an irregular and individualized basis throughout the year. We also offer such special programs as a two-year honors program in English for both grades 11 and 12, a course in creative writing taught by a skilled writer, a laboratory biology course using the 'Green Version' of the BSCS biology program, SMSG mathematics, journalism done in direct conjunction with the local Bennington newspaper, and a special developmental reading program using team teaching methods in the junior high school.

"Third, we believe that the recent innovations that have been made in educational methods have enabled teachers to do superior jobs. Thus, we have been utilizing team teaching in our eleventh grade course in American history and have been collating the American literature of our eleventh grade English course with the American history. Further, we are moving more and more into situations in which we have been using large-group, small-group, and individual learning situations. Toward these purposes, we have purchased furniture for our band room that converts it quite adequately into a large group instruction area, and we have built a room in an otherwise unused portion of the high school in which children can pursue individual projects without the necessity of going to a study hall. Along these same lines we are 'mechanizing' many of our activities by utilizing such instructional devices as the overhead projector and such record-keeping devices as a microfilming machine.

"Fourth, there is absolutely no substitute for a quality teacher, and we are going all out to attract to our school the best teachers that we can find from whatever place they come. For example, the two men teaching our tutorial course in world ideologies both have been specially selected to participate in a course sponsored by the nine northeastern state commissioners of education concerning world ideologies. Further, one of our faculty members is now on leave as a John Hay Fellow. Finally, qualifications we desire in the teacher could be enhanced by different views that arise naturally among people from different geographical locations. (Next year we will also attempt to bring to the United States a teacher from France to work with our own French department to expand the quality of our offering.)

Kirsch concluded by saying his school was doing these same kinds of things for all students.

Washington

WESTERN WASHINGTON'S SEMINAR

The honors program at Western Washington State College, in cooperation with the Bellingham, Washington, school district, sponsors an evening seminar for superior high school seniors during spring semester.

The seminar, "Great Ideas of the Twentieth Century," is held one evening a week for 17 weeks on the Western Washington campus. Discussions are led by faculty members of the college.

Although the seminar only was launched a year ago, both the principal of the schools, Lester F. Feldmann, and the chairman of the Honors Board of the College, Henry L. Adams, felt it was stimulating and useful to the students. Following the seminar Feldmann conducted personal interviews with the 30 participants, and the students only recommendation was that the series begin earlier in the year so that it would finish before the month of May, when there are many conflicting activities.

Following is the list of last year's seminar topics and recommended reading for each topic:

1. "Reform in 20th Century America"—Hofstadter, *Age of Reform.*
2. "Tradition vs. Innovation in Contemporary Music"—Copland, *Music and Imagination.*
3. "The Quantum Theory"—Gamow, *One, Two, Three . . . Infinity.*
4. "Subtle Suicide"—Bates, *The Forest and the Sea.*
5. "Problems of Maturing"—McCullers, *The Members of the Wedding.*
6. "The Community of Europe—Vision

and Reality"—Nystrom and Malef, *The Common Market*.

7. "When Is a Man?"—Simpson, *The Meaning of Evolution*.

8. "Prejudice"—Allport, *Prejudice in Modern Perspectives*.

9. "Discovery of Self"—Faulkner, "The Bear," Thurber, "The Secret Life of Walter Mitty," Forester, "The Machine Stops."

10. "Images of Man"—Sachs, *The Pocket Book of Great Drawings*.

11. "Communism and the Intellectual"—Crossman, Ed., *The God that Failed*.

12. "Determinism in History"—McAree, *Determinism in History*.

13. "Unconscious Motivation"—Hall, *A Primer of Freudian Psychology*.

14. "The Great Debate about American Education"—Scott, Hill, and Burns, *The Great Debate*.

15. "The Limits of Rationality"—James, *Will to Believe and Human Immortality*.

16. "The End of Colonialism"—Nkrumah, *I Speak of Freedom*.

17. "Control of Human Behavior"—Skinner, *Walden Two*.

Wisconsin

HONORS PROCEDURES FROM MADISON

There are 1,400 twelfth grade students in the three Madison schools, and about ten per cent take either advanced placement or honors courses. Sophomores and juniors also are eligible for honors courses. These are college preparatory courses revised to offer more depth and breadth.

Arthur H. Mennes, Curriculum Consultant in the Madison Public Schools Department of Curriculum, prepared a list of suggested objectives and procedures for establishing honors courses in the high schools. He warned that some honors courses would not lend themselves to the use of some of the following procedures:

1. Opportunity for experience, practice, and development of effective writing and speech patterns should be emphasized in all courses.

2. There should be opportunity for library research.

3. Enrichment procedures in English classes will include special training in the development of mature creative composition work, granting of considerable freedom for pupils in choosing research projects, and extensive supplementary reading, discussion of literature on a comparative basis, and incorporation into the course of background materials from many areas.

In the language arts, gifted students should be encouraged to do more choosing, planning, and evaluating of their own learning activities. They may read independently in areas of special interest and write original stories and plays for class or school publications, for local papers, or simply for enjoyment. Ethical problems should be discussed, using many sources.

4. There should be opportunities for seminar projects. Special privileges should be granted to these students for in- and out-of-school facilities, so that many resources can be used. In seminar meetings students discuss their projects and exchange information and views. They may also invite specialists in the school, the psychologist, a science teacher, or an art teacher to meet with them for discussion. Specialists outside the school, field trips, museums, exhibits, courthouses, theaters, and concerts round out seminar activities.

Reports are required to be well organized and properly presented from the standpoint of English composition and scientific accuracy. Interest in the present progress of a particular subject or area is stimulated, and the possibilities for the future are developed through the reading of current literature.

5. Developmental reading should be stressed. Students should strive to improve their reading speed and skill in all subjects.

6. There should be particular emphasis in all honors courses on the use and development of problem-solving techniques. Discussions may be based on common reading or arise from individual study and reports.

7. Extensive reference reading, critical evaluation of books, extensive use of maga-

zines, newspapers, T.V., films, radio programs, and of the library facilities should be encouraged in honors courses.

8. Much use of a variety of community and school resources should be developed.

9. There should be sharing of the results of independent study and research by pupils.

10. There should be opportunities in mathematics, science, language arts, and social studies for gifted students to explore particular interests as deeply as their backgrounds permit.

11. Some participation in approved local and national contests should be encouraged.

12. Use of more creative approaches and flexibility in assignments should provide room for differentiated experiences.

Report on NSF USE MEETING

Fifty-one behavioral scientists directing Undergraduate Science Education Programs in Undergraduate Research Participation and Independent Study (USE) met in Minneapolis in October. The meeting was sponsored by the National Science Foundation, and the purpose of the meeting was to discuss various ways in which USE is being used to facilitate undergraduate training and intellectual commitment. The discussion developed the following points:

1. Standards for student recipients of USE support can be set very high if the local department is willing to invite students from other campuses to participate.

2. Effective selection of students can be achieved by having students engage in a trial year of independent study before they are invited into the USE program.

3. The USE program is of value both to faculty and students. For students it is a means of coming directly in contact with research activity at the undergraduate level. For faculty it is often a means of developing and supporting research.

4. There was general agreement that specific and formally developed empirical research promotes the best working relationship between the student and faculty member in the USE program.

5. The USE program promotes more accurate evaluations of the research and academic potential of a given student.

6. The question was raised as to whether the USE program upgrades a departmental graduate curriculum by introducing undergraduates to work that is essentially graduate in nature. No consensus could be reached on this issue. Some members of the conference felt the graduate curriculum was not affected; others felt it was.

7. Another question that received serious discussion was: Is the USE program exploiting students who are called upon to do fairly heavy amounts of work for little or no monetary compensation? The consensus was that faculty research supervisors participating in these programs give as much, if not more, in the way of research training and guidance as they receive in the way of assistance from the student.

8. There was general agreement that USE and honors programs can be and ought to be integrated.

9. There was considerable division of opinion over whether or not one should support students in the USE program who will not become career researchers. However, most were inclined to the view that dedication to a research career should not be emphasized to the point where the recruiting function of USE might be ignored.

10. Finally the issue of evaluation was raised, i.e., can the selection and training effects of the program be isolated from each other? There was virtually universal agreement that these effects cannot be isolated. However, it was also agreed that this is not necessary. It is not necessary because the attitude of faculty, administrators, and students involved in the USE program is, almost without exception, strongly positive.

Because of prior interest in the subject of honors in high school and high school-college cooperation in this area, we have printed a limited number of extra copies of this issue of *The Superior Student*. They are available to those interested at cost—15¢ apiece—plus mailing charges. To order extra copies merely write ICSS, University of Colorado, Boulder, Colorado.

We also have copies of Gerald Holton's insert, "Physics and Culture: Definition of Goals, and Proposals for Science Instruction," from the September-October 1963 *Superior Student*, which are available at 15¢ each plus postage, and "The Ford MA-3," an insert in the March-April 1963 *Superior Student*, which is available free of charge.

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